Monetary Policy Report
October 2017

SVERIGES RIKSBANK

SVERIGES RIKSBANK

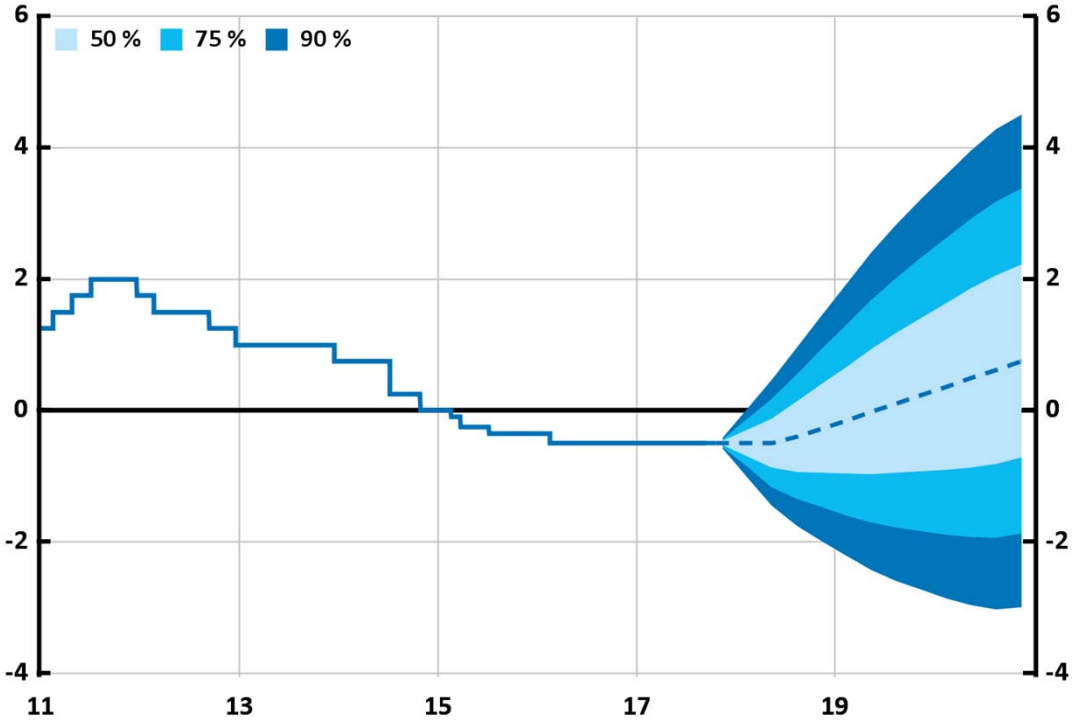# Chapter 1

Figure 1.1. Repo rate with uncertainty bands

Per cent

Note. The uncertainty bands for the repo rate are based on the Riksbank's historical forecasting errors and the ability of risk-premium adjusted forward rates to forecast the future repo rate for the period 1999 up to the point when the Riksbank started to publish forecasts for the repo rate during 2007. The uncertainty bands do not take into account the fact that there may be a lower bound for the repo rate. Outcomes are daily rates and forecasts refer to quarterly averages.

Source: The Riksbank

Figure 1.2. GDP with uncertainty bands

Annual percentage change, seasonally-adjusted data
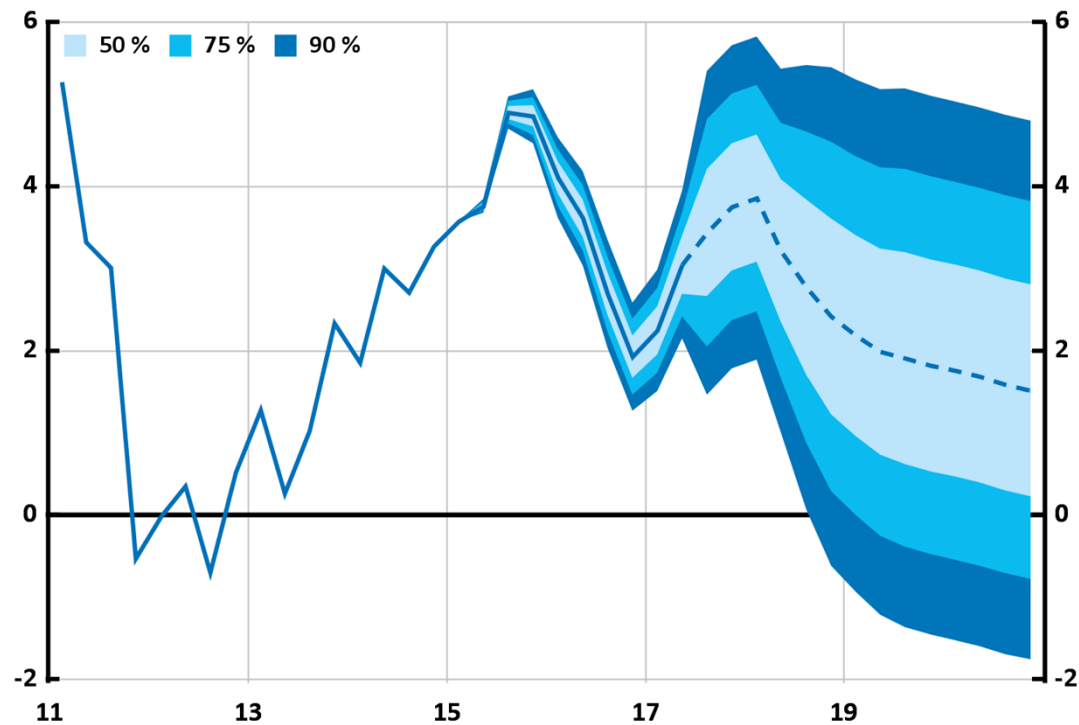
Note. The uncertainty bands are based on the Riksbank's historical forecasting errors. There is also uncertainty for the outcomes for GDP, as the figures in the National Accounts are revised several years after the preliminary publication.

Sources: Statistics Sweden and the Riksbank

Figure 1.3. CPIF with uncertainty bands
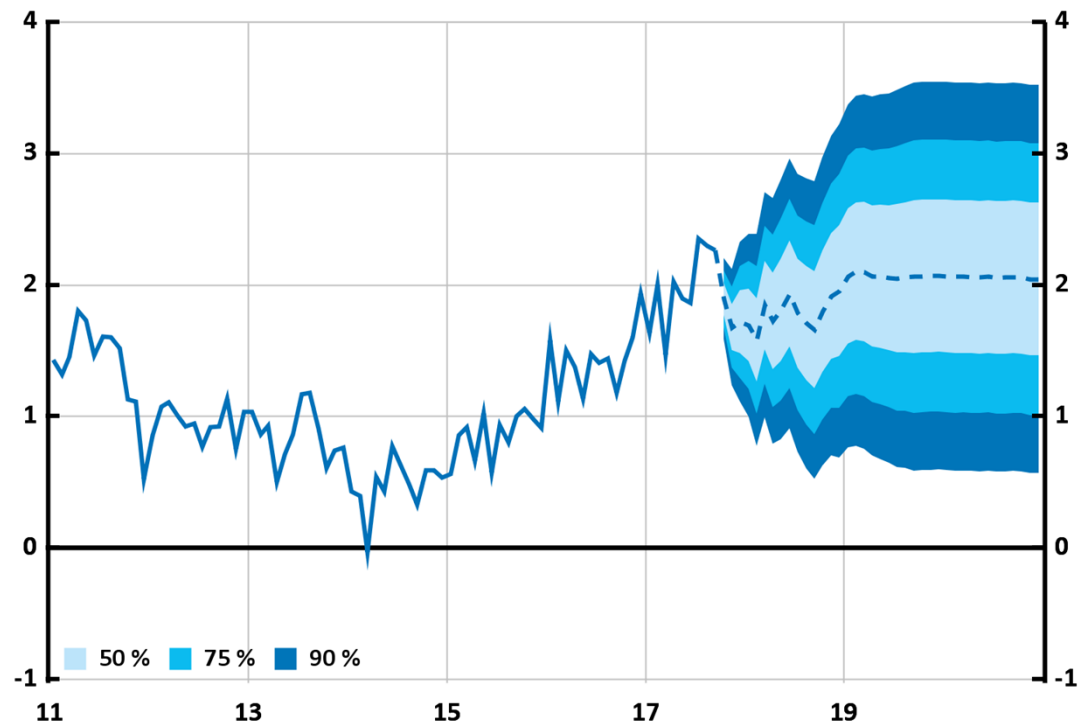
Annual percentage change

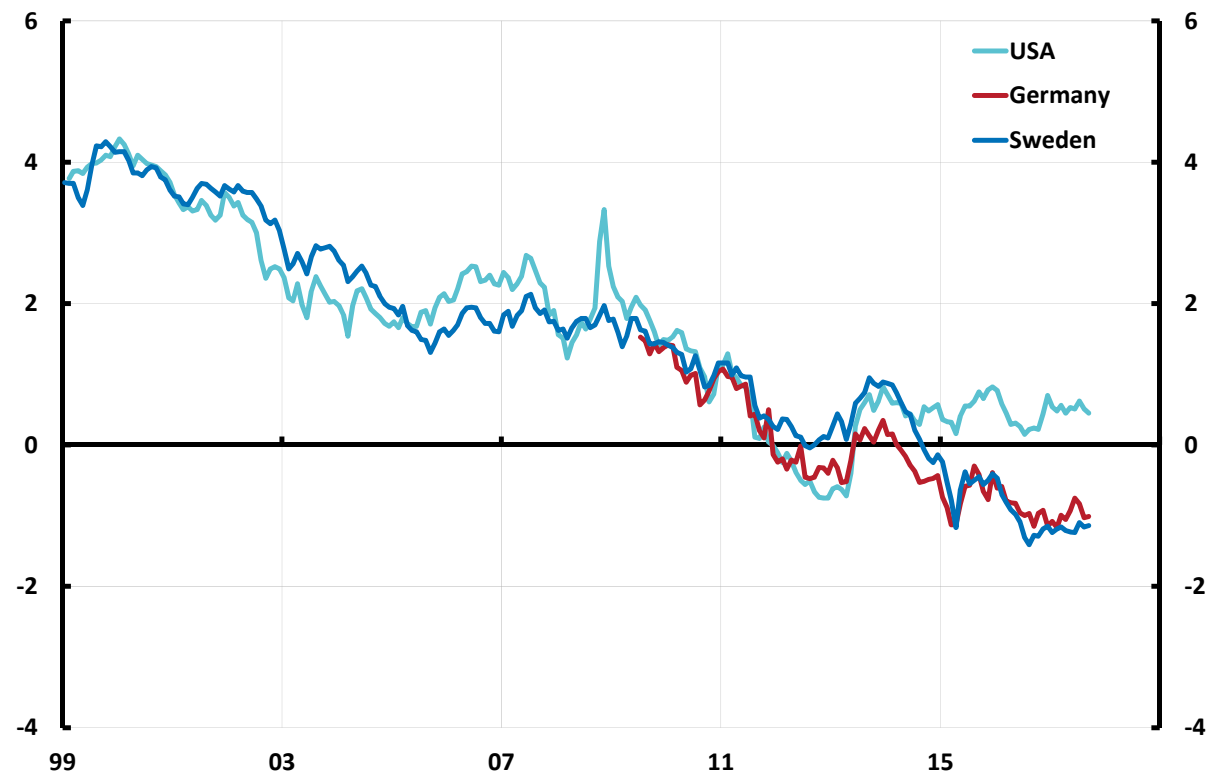# Figure 1.4. KIX-weighted nominal exchange rate

Index, 1992-11-18 = 100

Note. Outcomes are daily rates and forecasts refer to quarterly averages. KIX refers to an aggregate of countries that are important for Sweden's international transactions.

Sources: National sources and the Riksbank
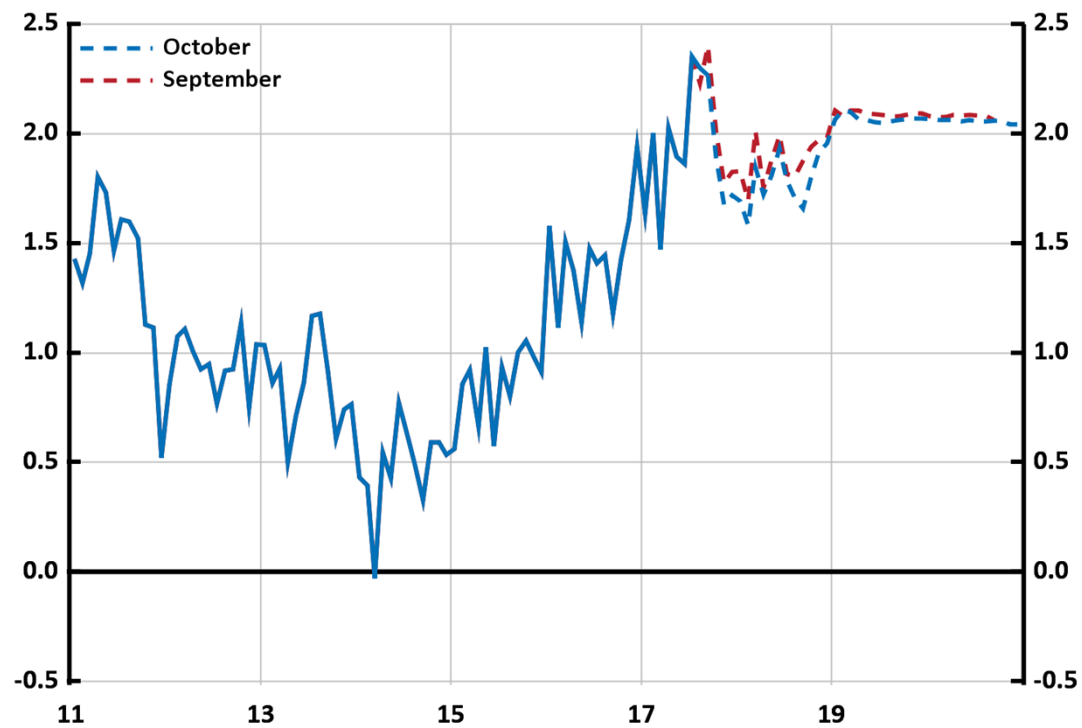
Figure 1.5. Real interest rate

Per cent

Note. 10-year yield on real government bonds in Sweden, Germany and the United States. Swedish real interest rate is zero coupon yields interpolated from bond prices using the Nelson-Siegel method.

Sources: Bloomberg, Federal Reserve, Thomson Reuters and the Riksbank.
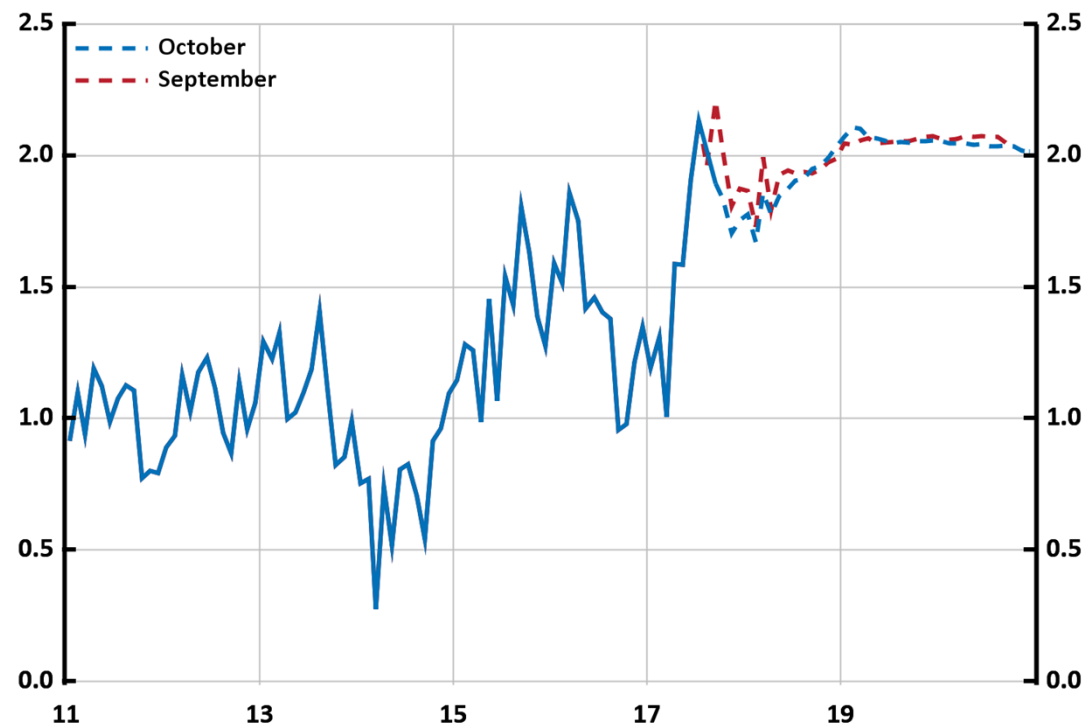
Figure 1.6. CPIF

Annual percentage change

Note. The CPIF is the CPI with a fixed interest rate.

Sources: Statistics Sweden and the Riksbank

Figure 1.7. CPIF excluding energy
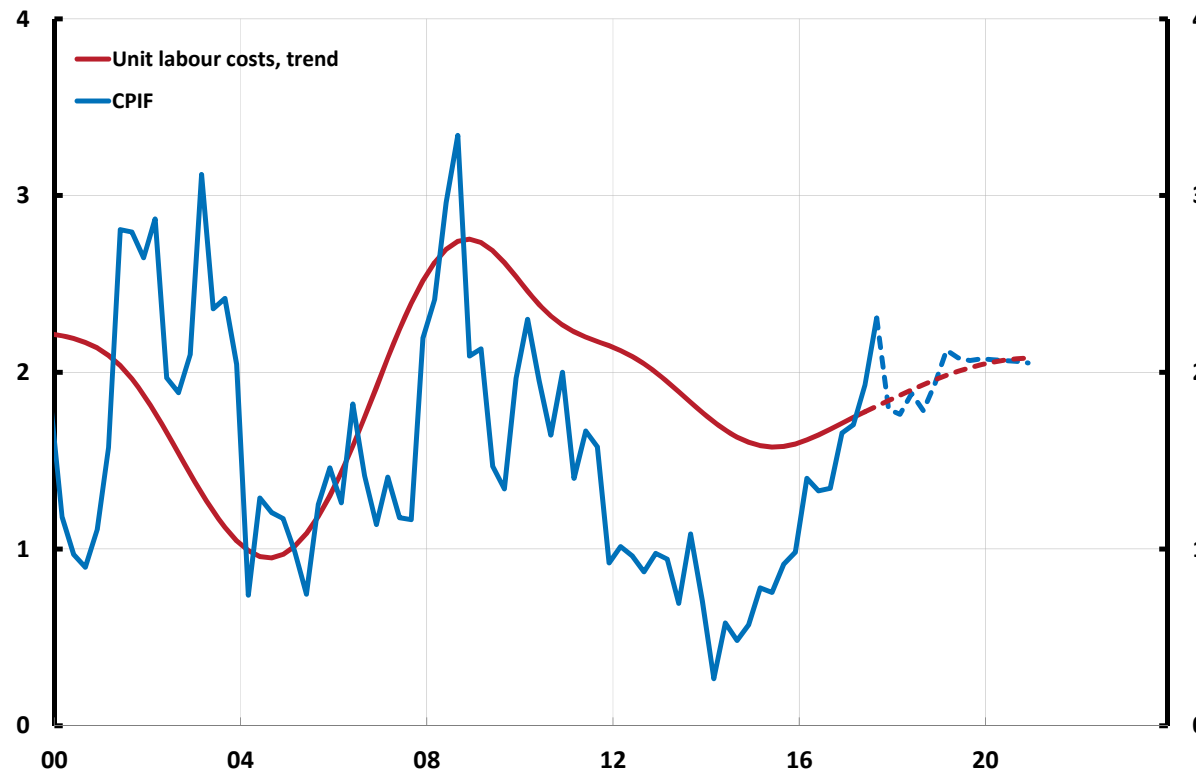
Annual percentage change

Note. The CPIF is the CPI with a fixed interest rate.

Sources: Statistics Sweden and the Riksbank

# Figure 1.8. Unit labour costs and inflation

Annual percentage change

Note. The trend in unit labour costs has been calculated using a so-called HP filter. To calculate the trend, the Riksbank's forecast in October 2017 and an assumption that unit labour costs will increase by 2 per cent beyond the forecast horizon are used.

Sources: Statistics Sweden and the Riksbank

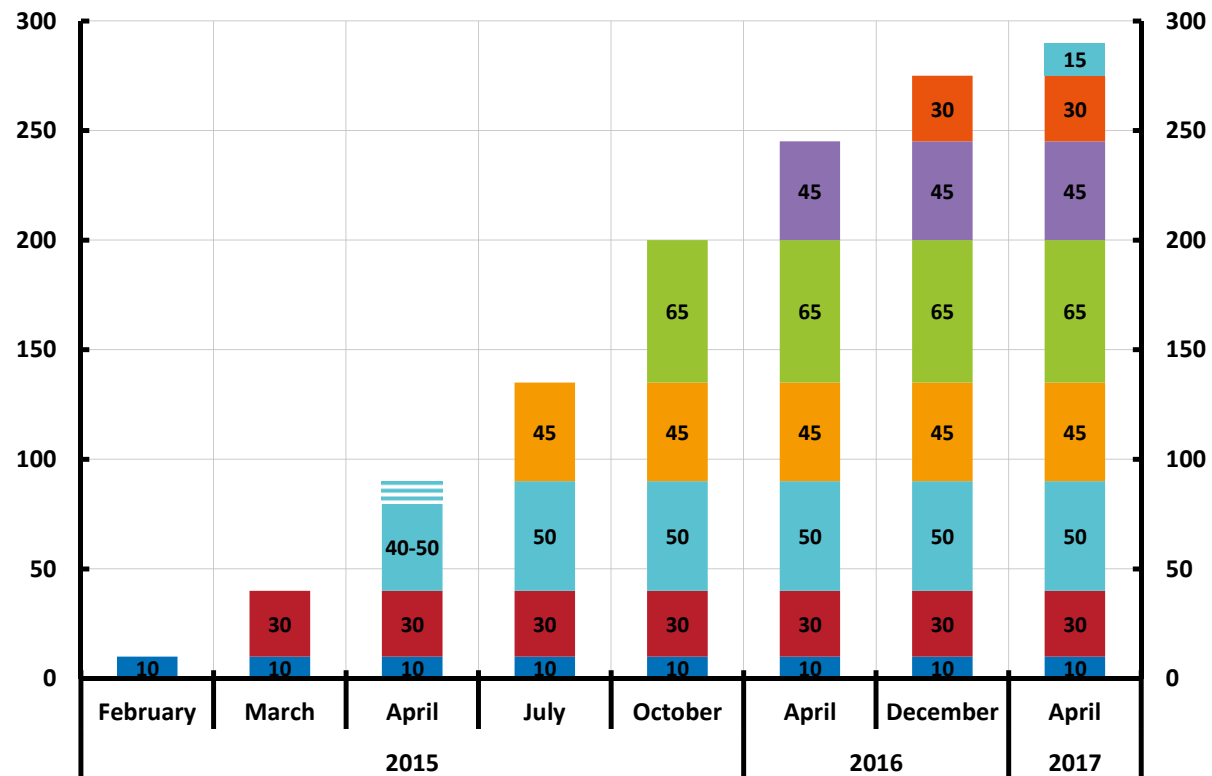# Figure 1.9. Repo rate

Per cent
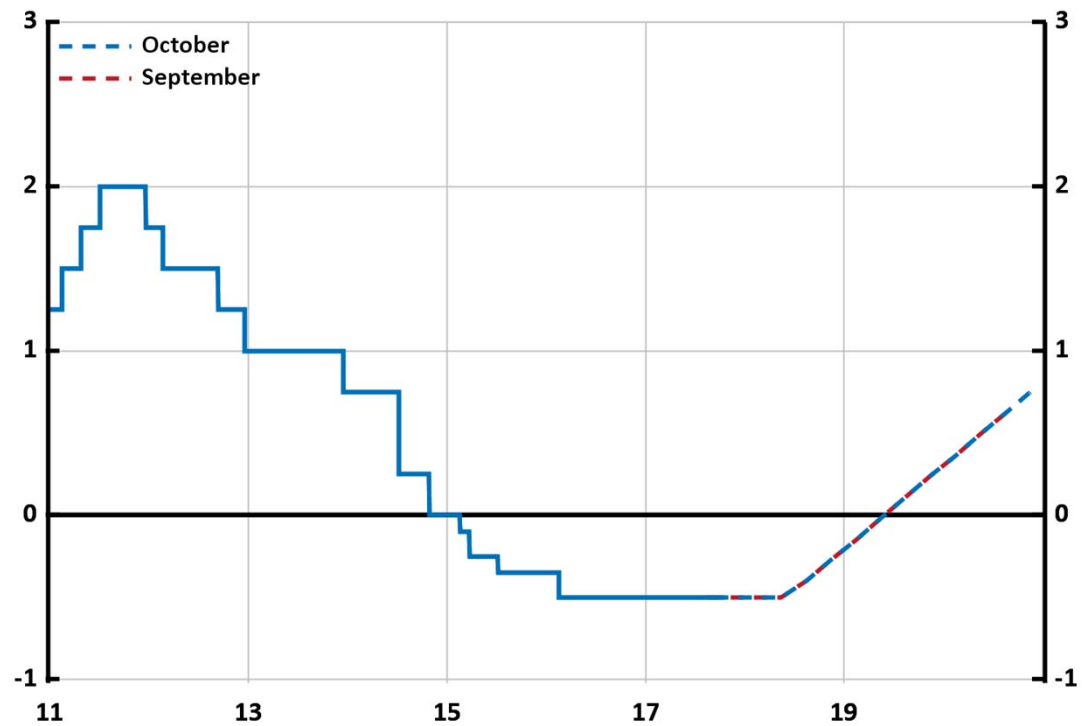
Note. Outcomes are daily data and the forecasts refer to quarterly averages.

Source: The Riksbank

Figure 1.10. Purchases of government bonds decided by the Riksbank
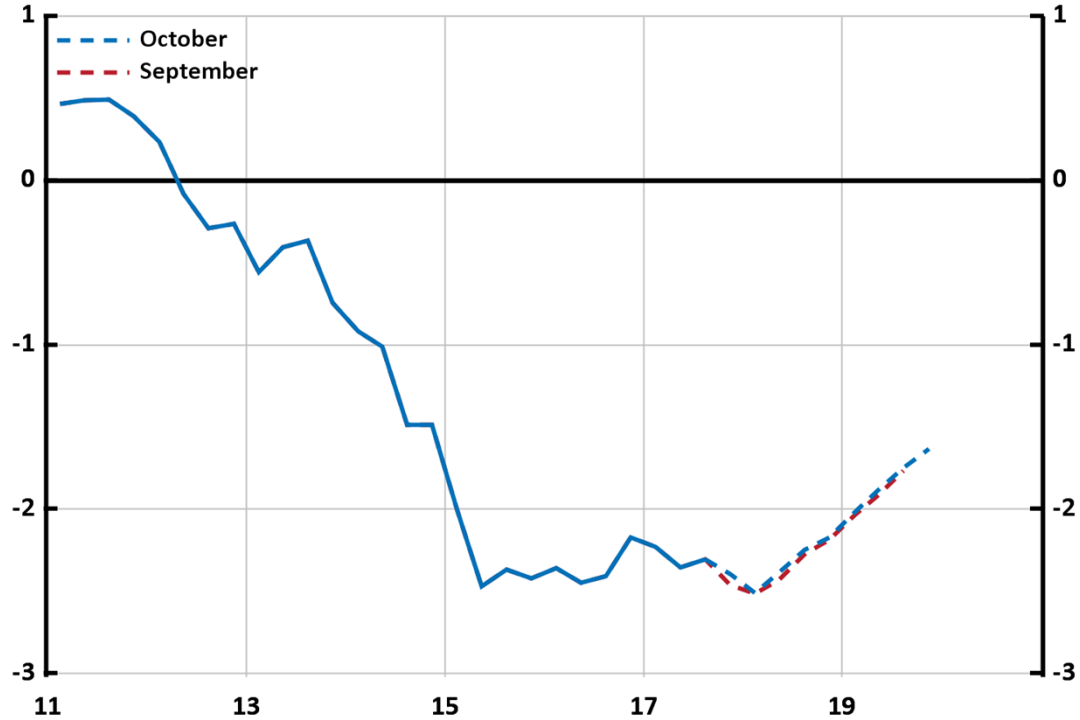
SEK billion

Note. Purchases of government bonds, excluding reinvestments, will continue until the end of-2017.

Source: The Riksbank

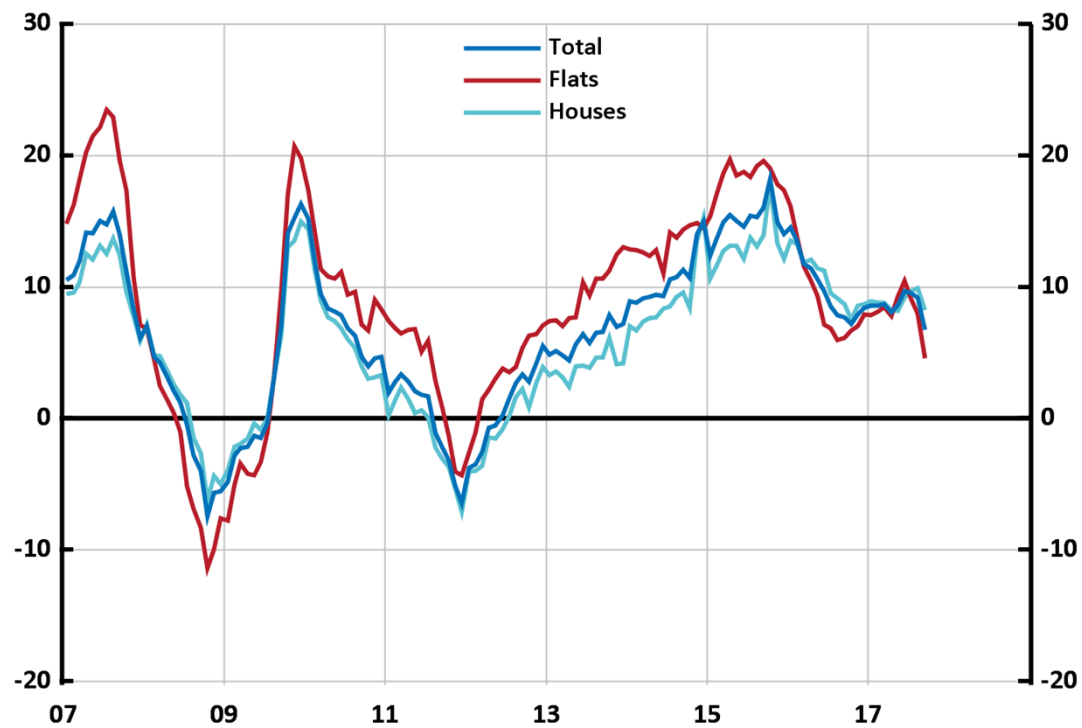# Figure 1.11. Real repo rate

Per cent, quarterly averages

Note. The real repo rate is a mean value of the Riksbank's repo rate forecast for the year ahead minus the inflation forecast (CPIF) for the corresponding period.

Sources: Statistics Sweden and the Riksbank

Figure 1.12. Housing prices

Annual percentage change

Source: Valueguard

Figure 1.13. Household debt ratio

Per cent of disposable income
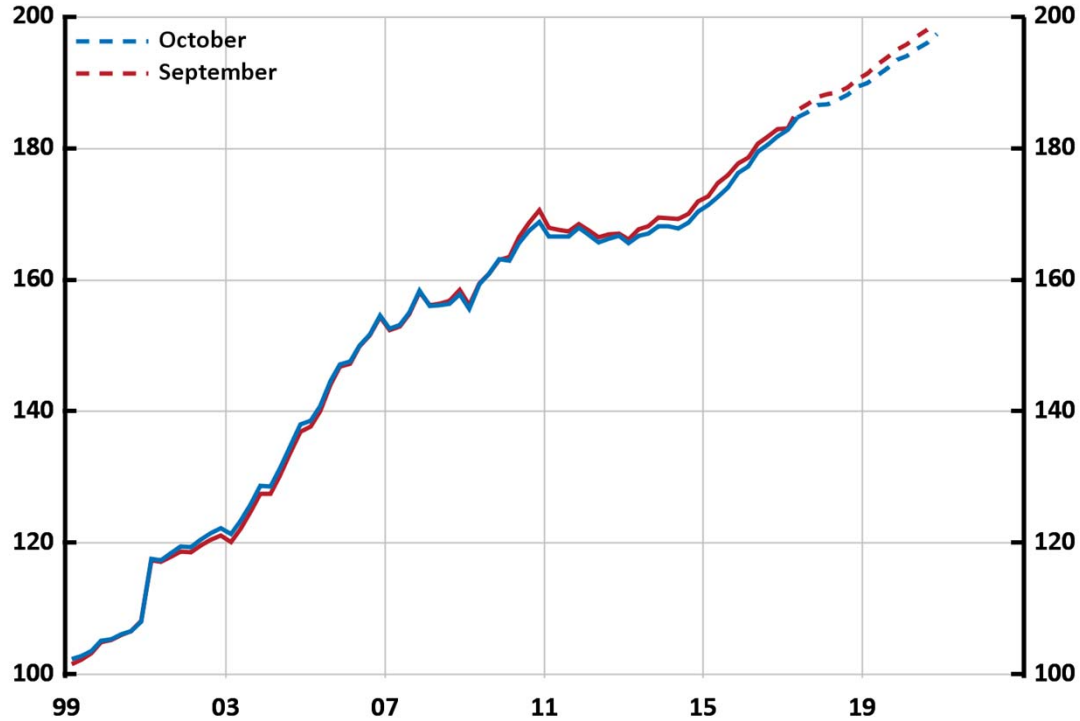
Note. Households' total debts as a share of their disposable incomes totalled over the past four quarters.

Sources: Statistics Sweden and the Riksbank

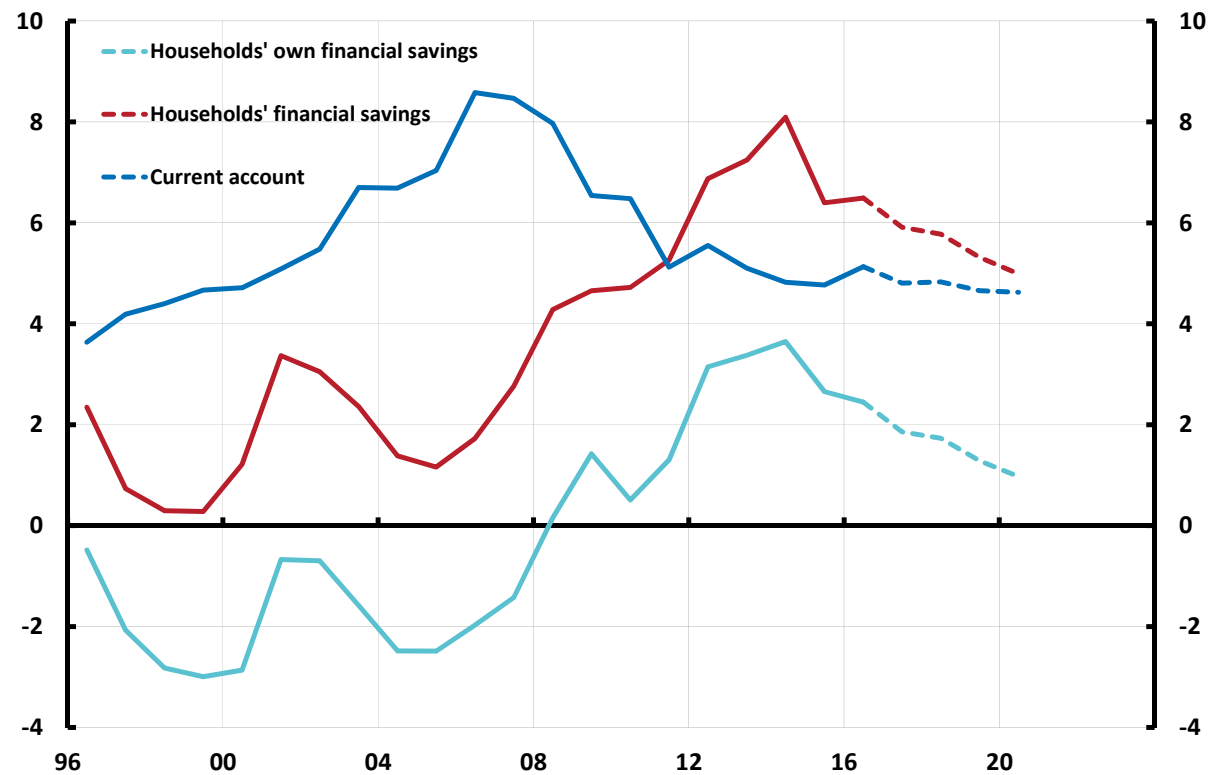# Article – Is activity in the Swedish economy too high?

Figure 1.14. Current account and households' financial savings

Per cent of GDP

Sources: Statistics Sweden and the Riksbank

Figure 1.15. Business sector investments

Per cent of GDP, four quarter moving average
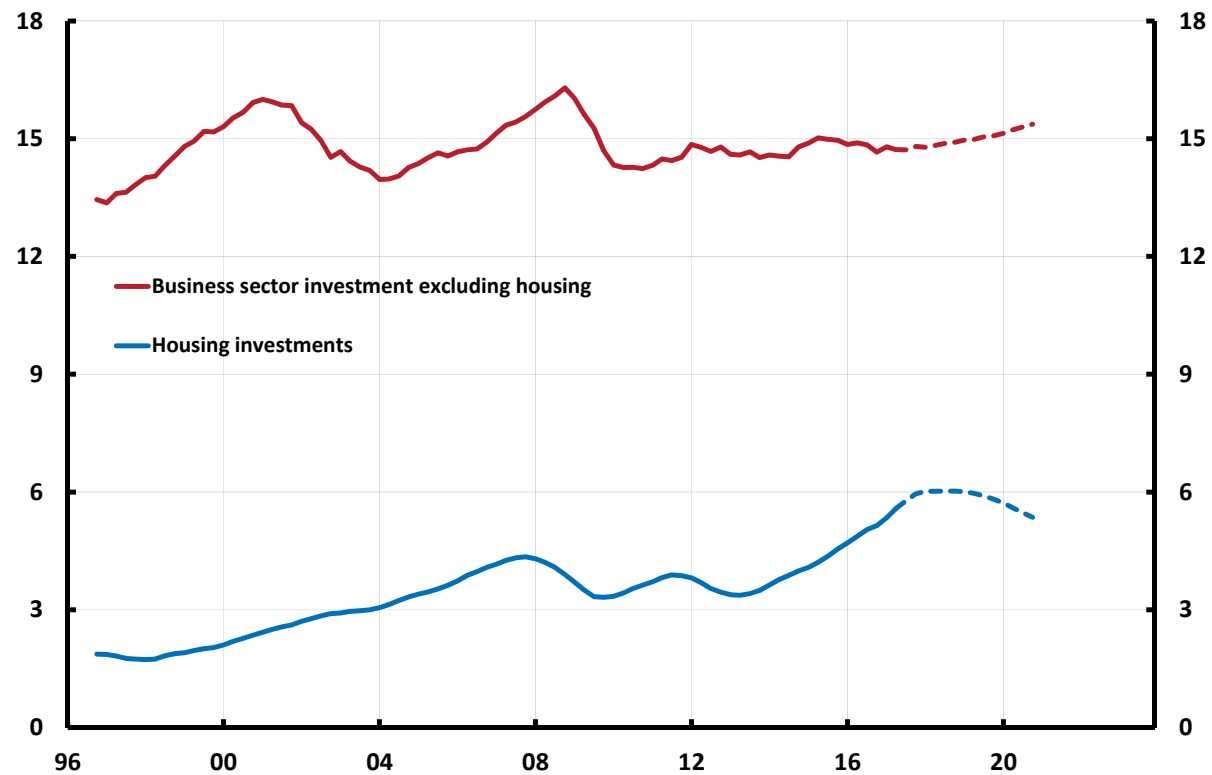
Business sector investment excluding housing

Housing investments

Figure 1.16. Disposable income, house prices and household debt

Index, 1996 Q1 = 100
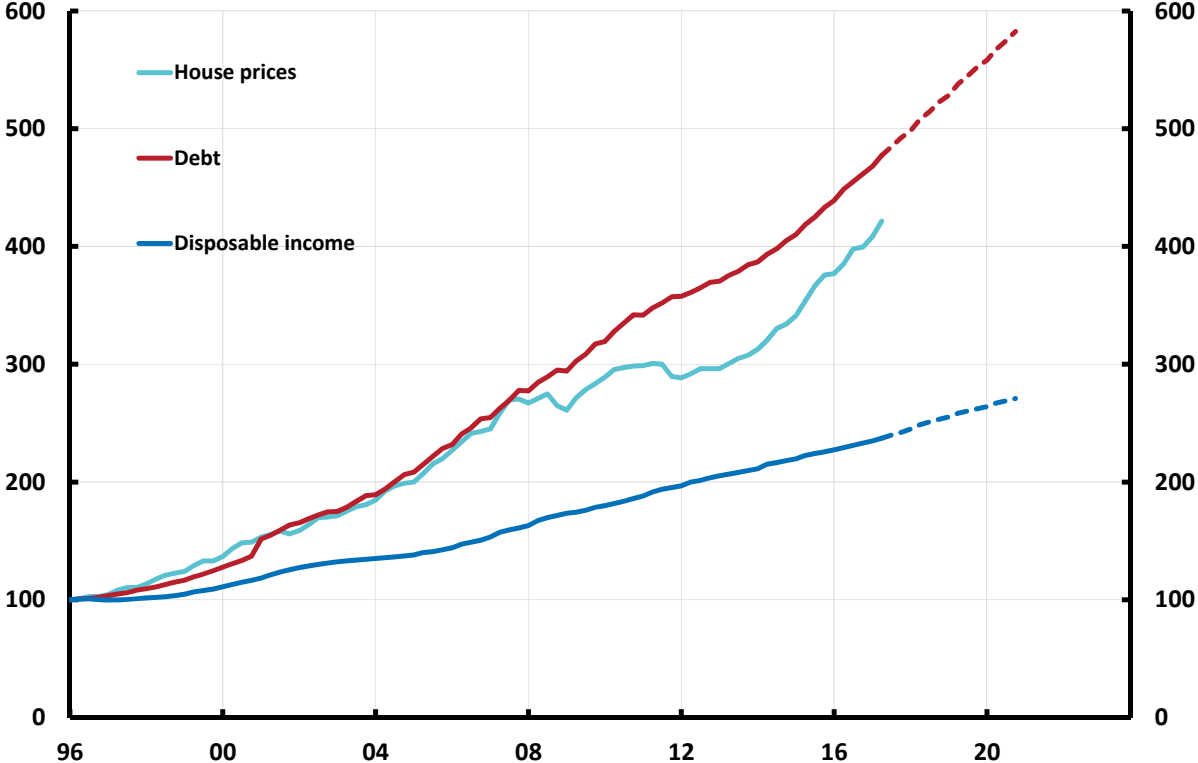
Note. Disposable income refers to four quarter moving average.

Sources: Statistics Sweden and the Riksbank

Chapter 2

Figure 2.1. Policy rates and rate expectations according to forward rates

Per cent
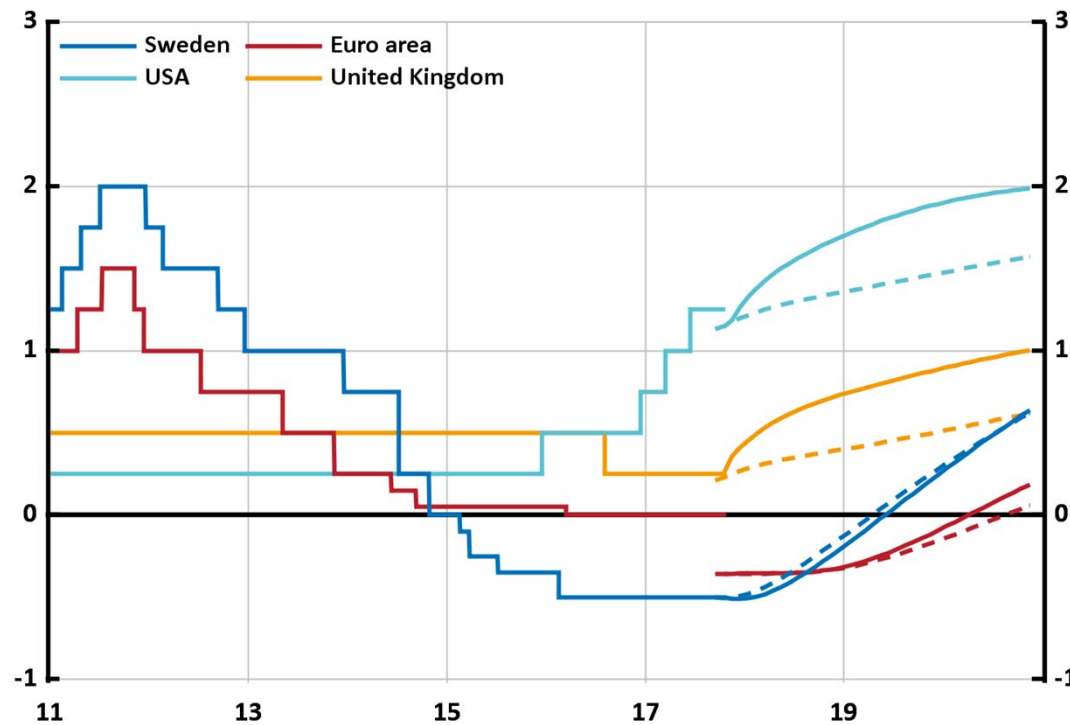
Figure 2.2. Trade-weighted exchange rates

Index, 2017-01-01=100

Legend: CAD, GBP, USD, EUR
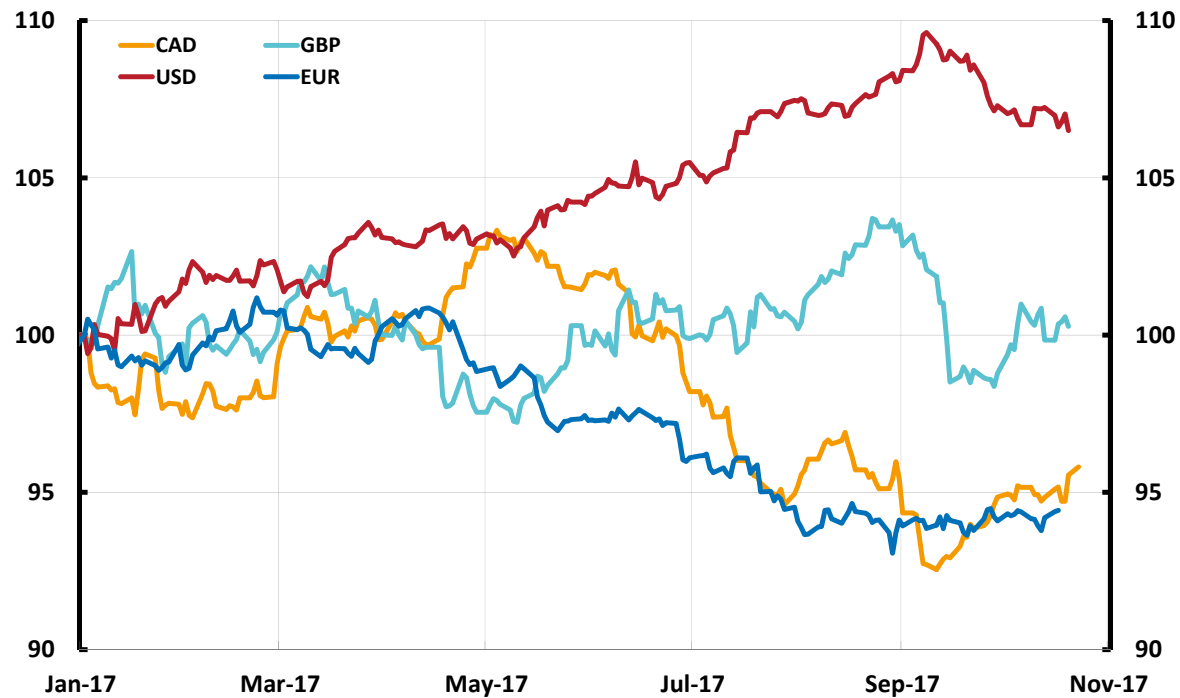
Note. A value higher than 100 indicates a weaker exchange rate.

Sources: Macrobond and the Riksbank

Figure 2.3. Government bond yields with 2 years left to maturity
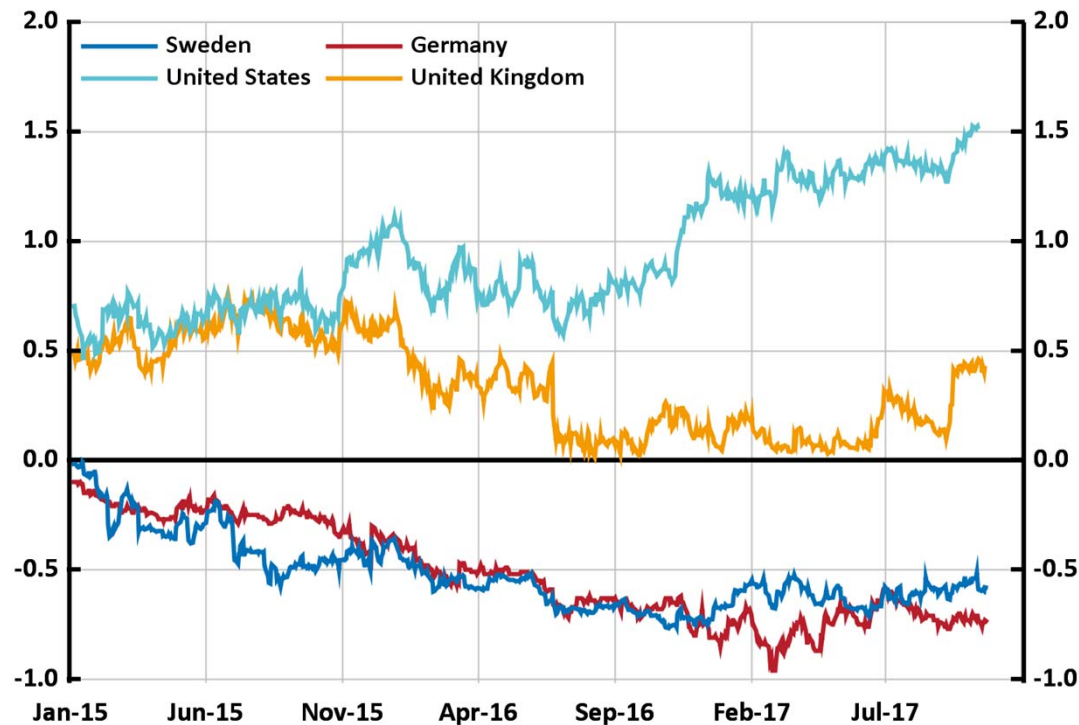
Per cent

Note. Implied zero-coupon yields from government bonds.

Sources: The national central banks and the Riksbank

Figure 2.4. Government bond yields with 10 years left to maturity
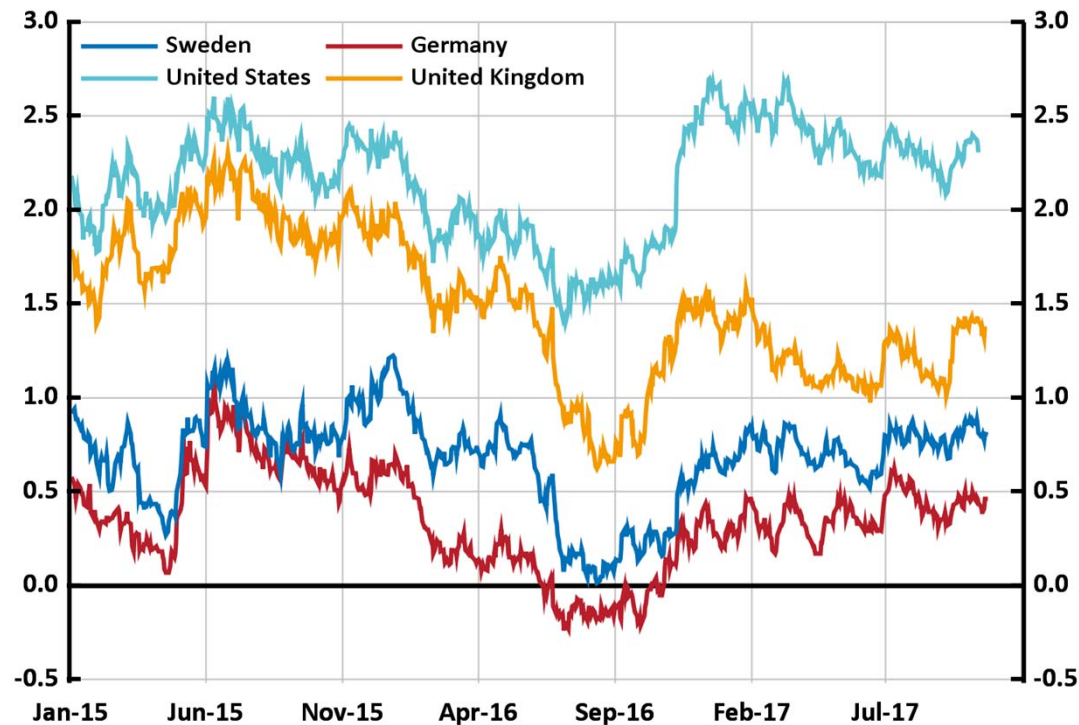
Per cent

Note. Implied zero-coupon yields from government bonds.

Sources: The national central banks and the Riksbank

Figure 2.5. Stock market movements in local currency

Index, 2 January 2015 = 100
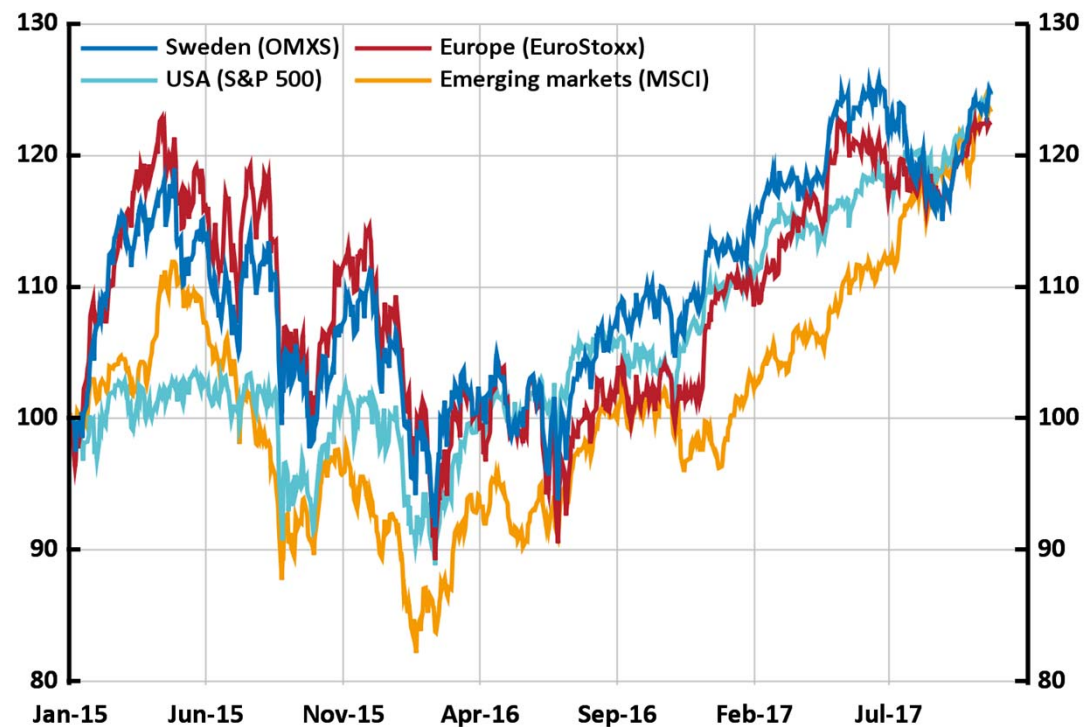
Sources: Macrobond and Thomson Reuters

Figure 2.6. Repo rate and market expectations

Per cent, average
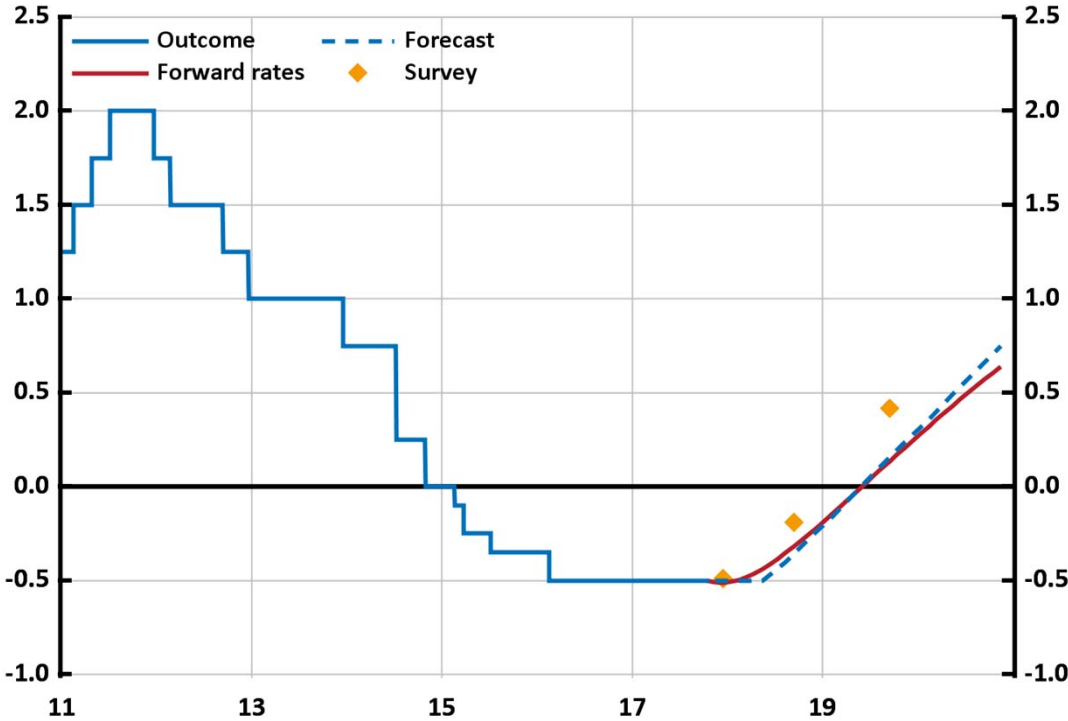
Note. The forward rates are estimated as of 23 October 2017 and measure the expected repo rate. The survey responses show the average for money market participants on 11 October 2017.

Sources: Macrobond, TNS Sifo Prospera and the Riksbank

Figure 2.7. Short market rates and the repo rate

Per cent
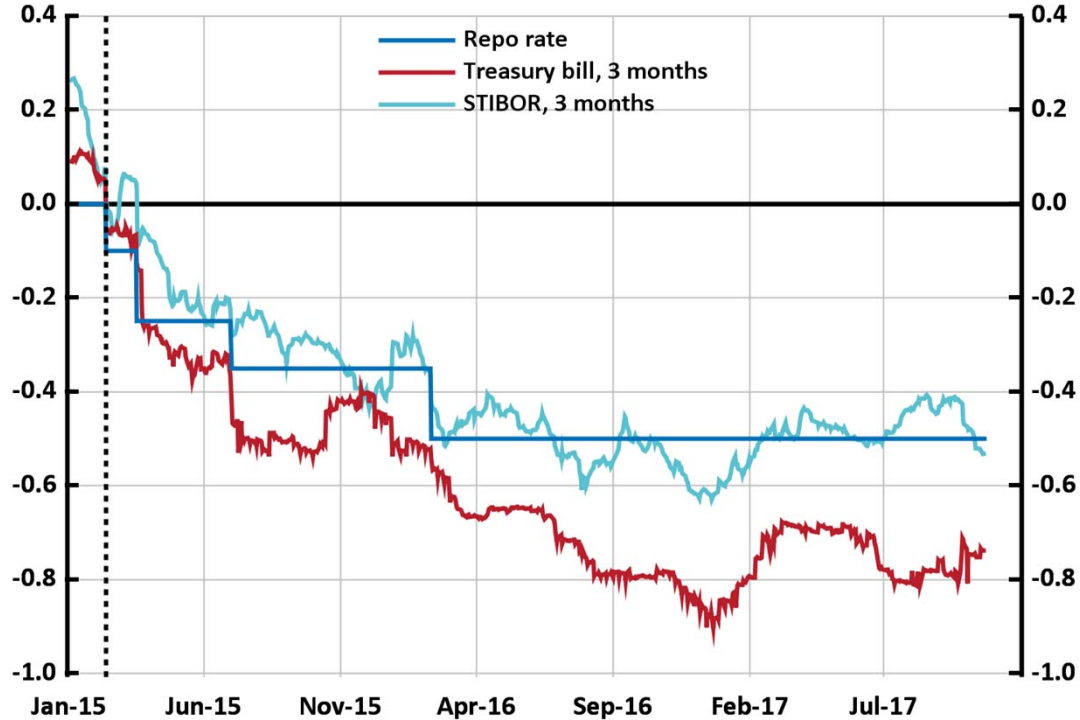
Note. The broken line refer to the start of the bond purchases.

Sources: Macrobond and the Riksbank

Figure 2.8. Repo rate together with the deposit and lending rate to households and companies, new contracts

Per cent
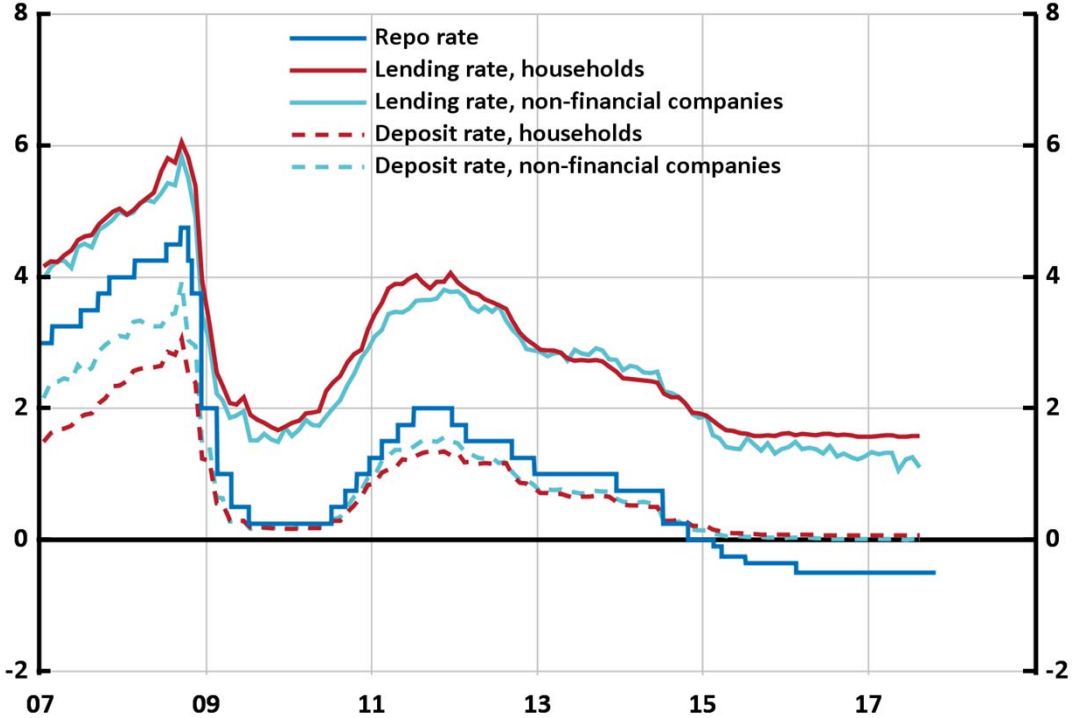
Note. MFIs' average deposit and lending rates for households and non-financial companies.   Sources: Statistics Sweden and the Riksbank

Figure 2.9. Bank lending to households and companies

Annual percentage change
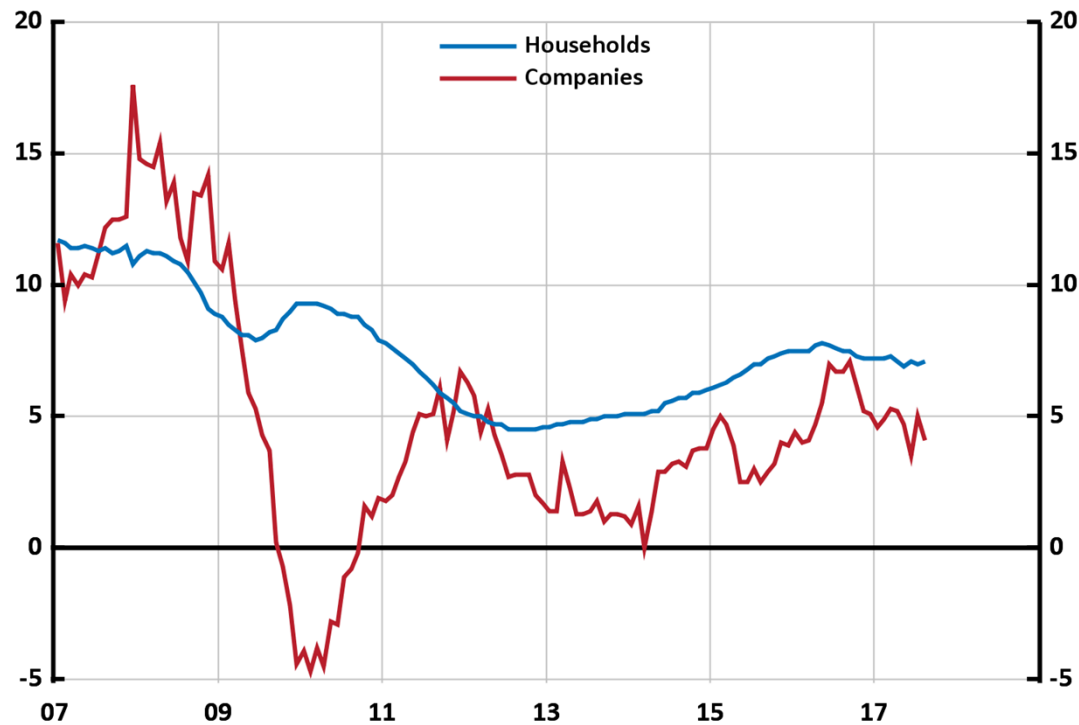
Note. MFIs' lending to households and non-financial companies according to financial market statistics adjusted for reclassifications and traded loans since 2006.

Source: Statistics Sweden

Chapter 3

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Figure 3.1. CPIF and variation band

Annual percentage change
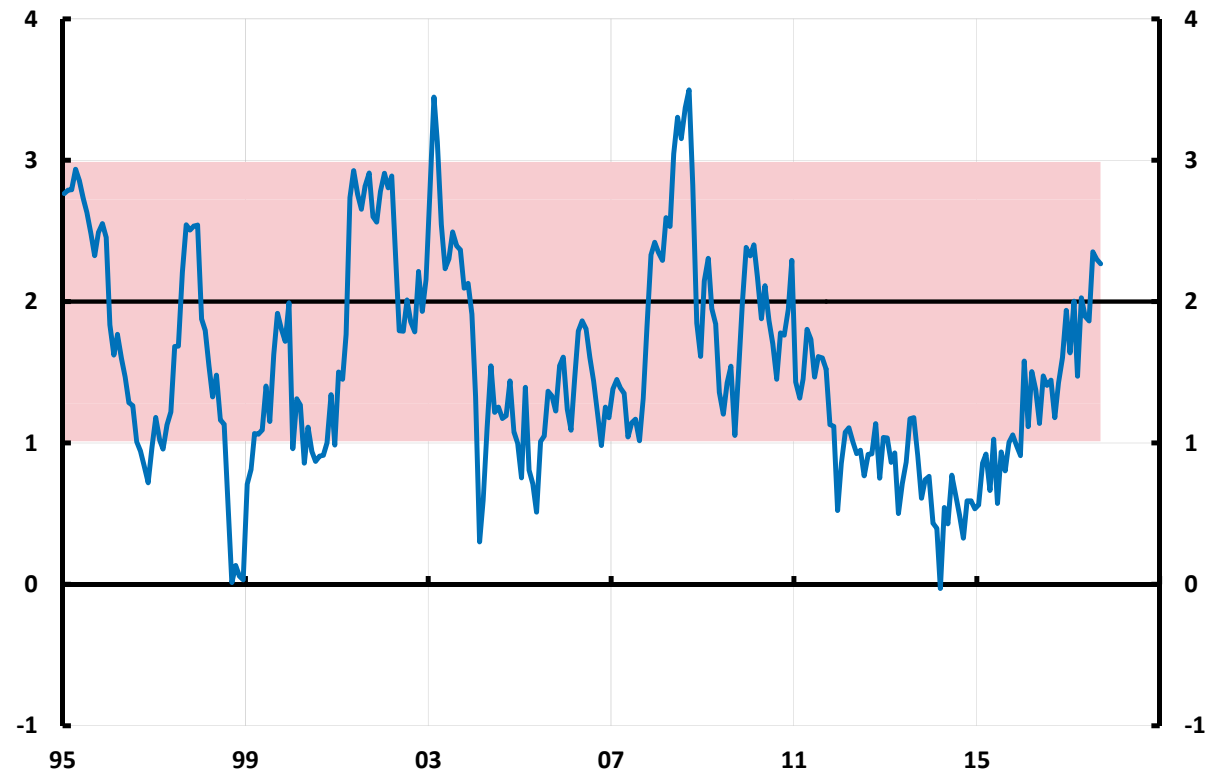
Figure 3.2. Prices of goods and services in the CPI

Annual percentage change
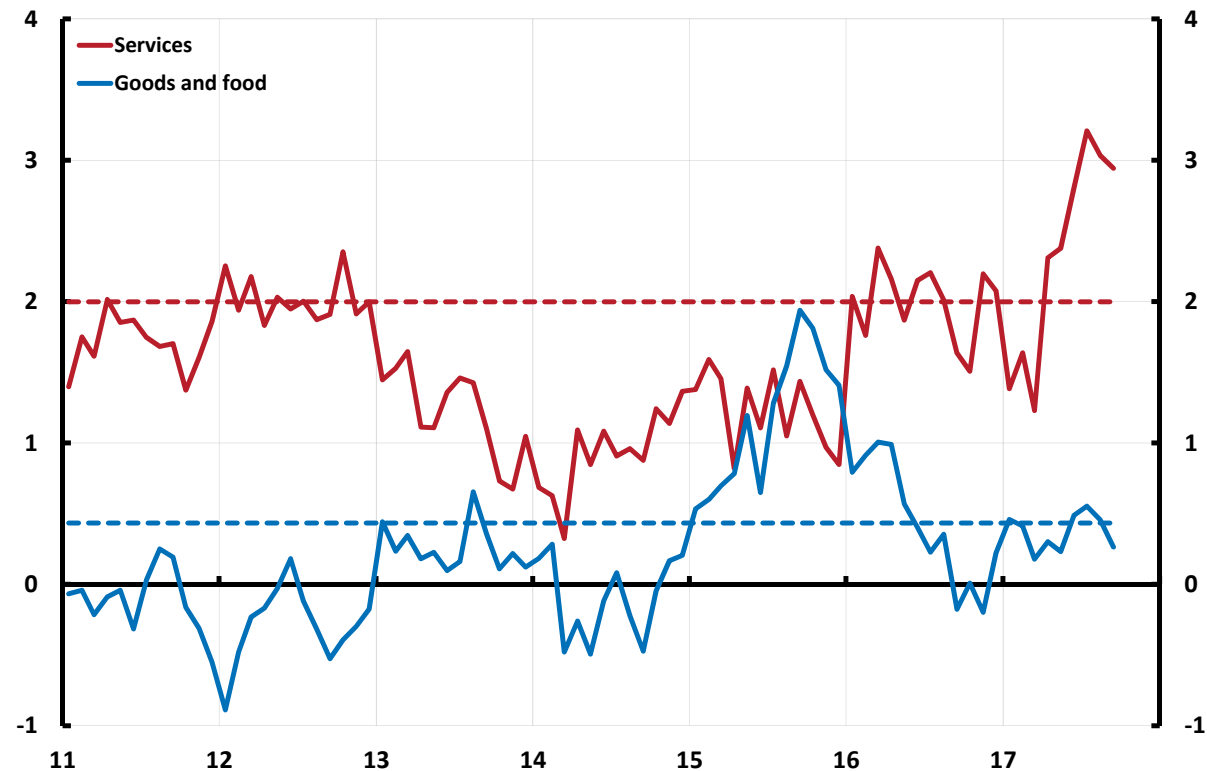
Note. Goods and food is a combination of the aggregate goods and food in the CPI. Together, these account for 45 per cent of the CPI. Service prices account for 45 per cent of the CPI. The broken lines represents the mean value since January 1995.

Sources: Statistics Sweden and the Riksbank

Figure 3.3. The CPIF and different measures of underlying inflation

Annual percentage change
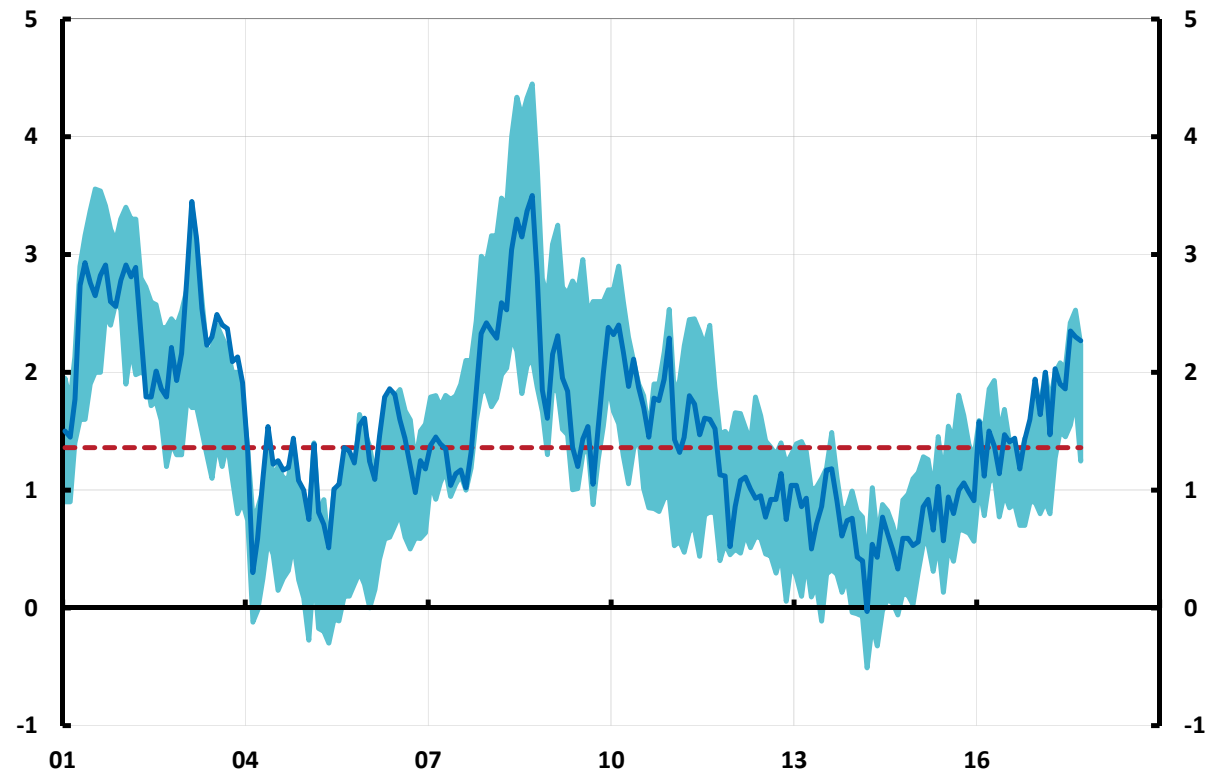
Note. The field shows the highest and lowest outcomes among different measures of underlying inflation. The measures included are the CPIF excluding energy, the CPIF with constant tax, UND24, Trim85, HICP excluding energy and unprocessed food, persistence-weighed inflation, factors from principal component analysis and weighted mean inflation. The broken line represent the mean value since January 2000 for all different measures of underlying inflation.

Figure 3.4. CPIF excluding energy, model forecast with uncertainty bands

Annual percentage change
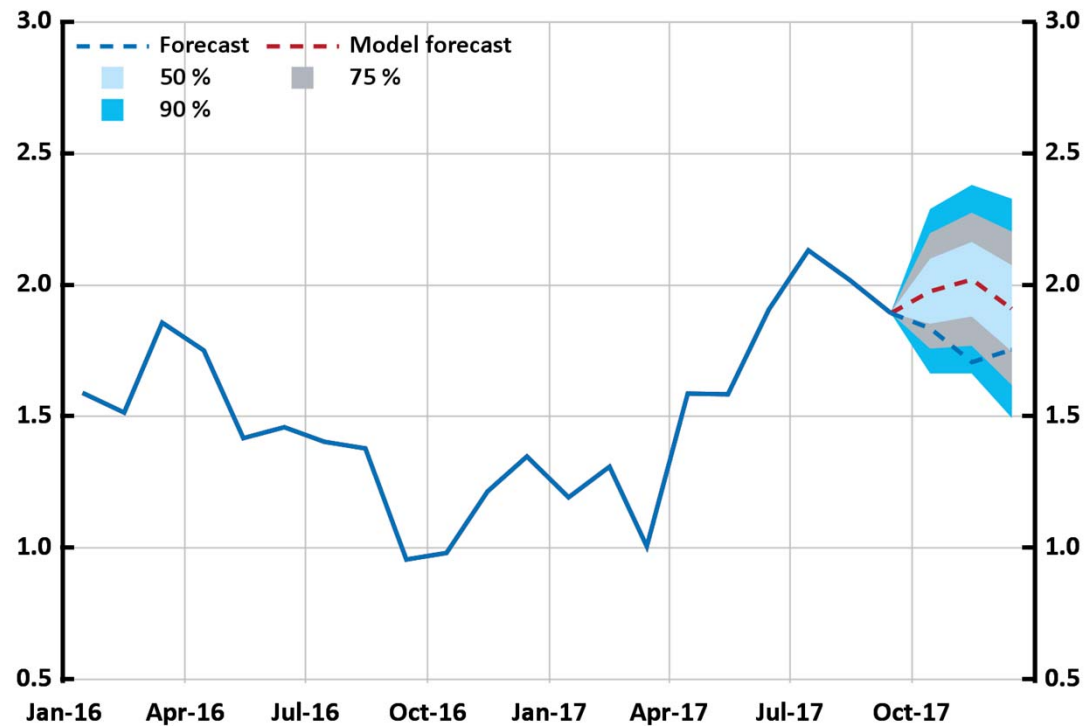
Note. The uncertainty bands are based on the models´ historical forecast errors.

Sources: Statistics Sweden and the Riksbank

Figure 3.5. Inflation expectations among money market participants

Per cent, mean value
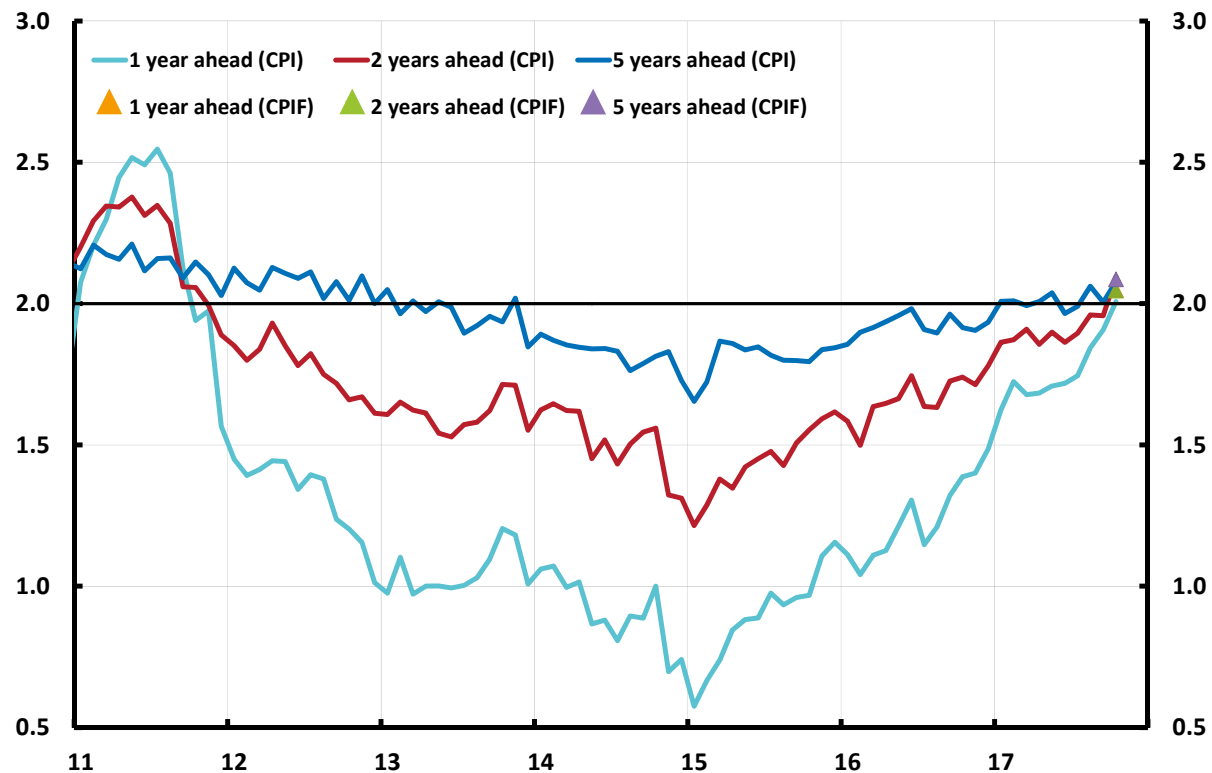
Source: TNS Sifo Prospera

Figure 3.6. Retail trade abroad

Index, 2008 = 100, seasonally adjusted data
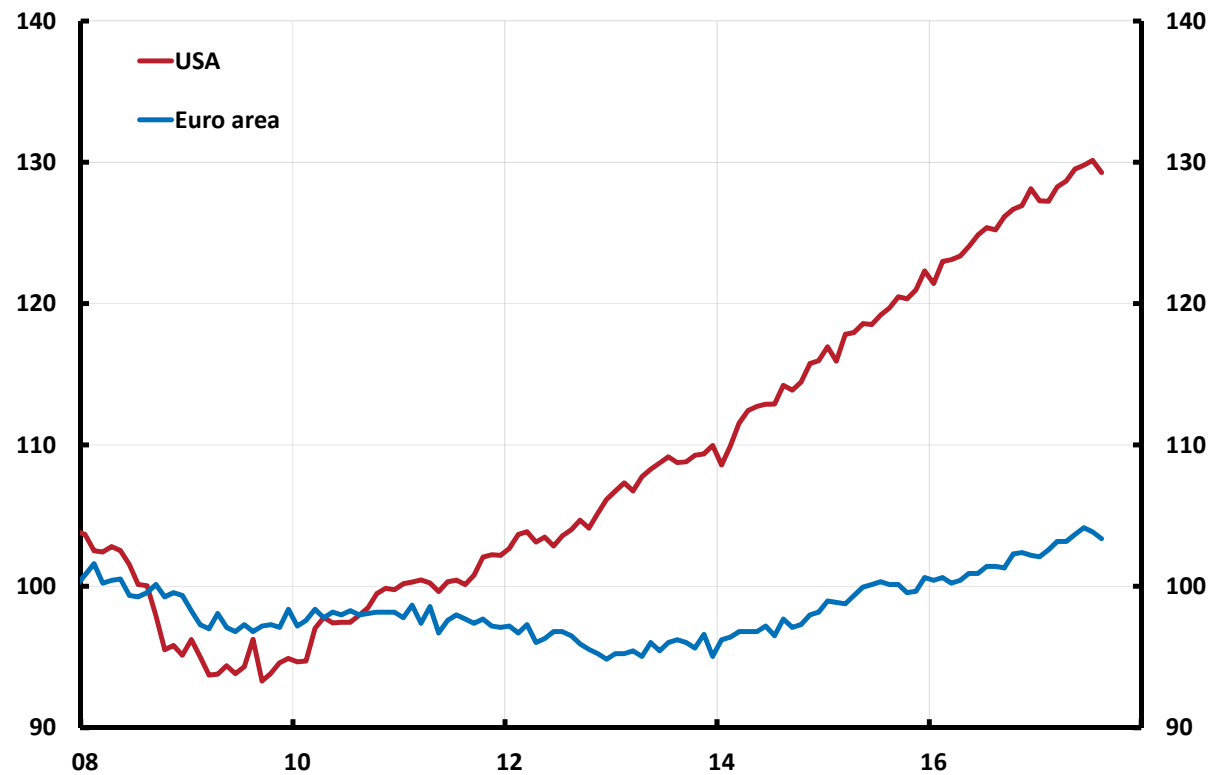
Sources: Eurostat and U.S. Bureau of Economic Analysis (BEA)

Figure 3.7. Underlying inflation abroad

Annual percentage change
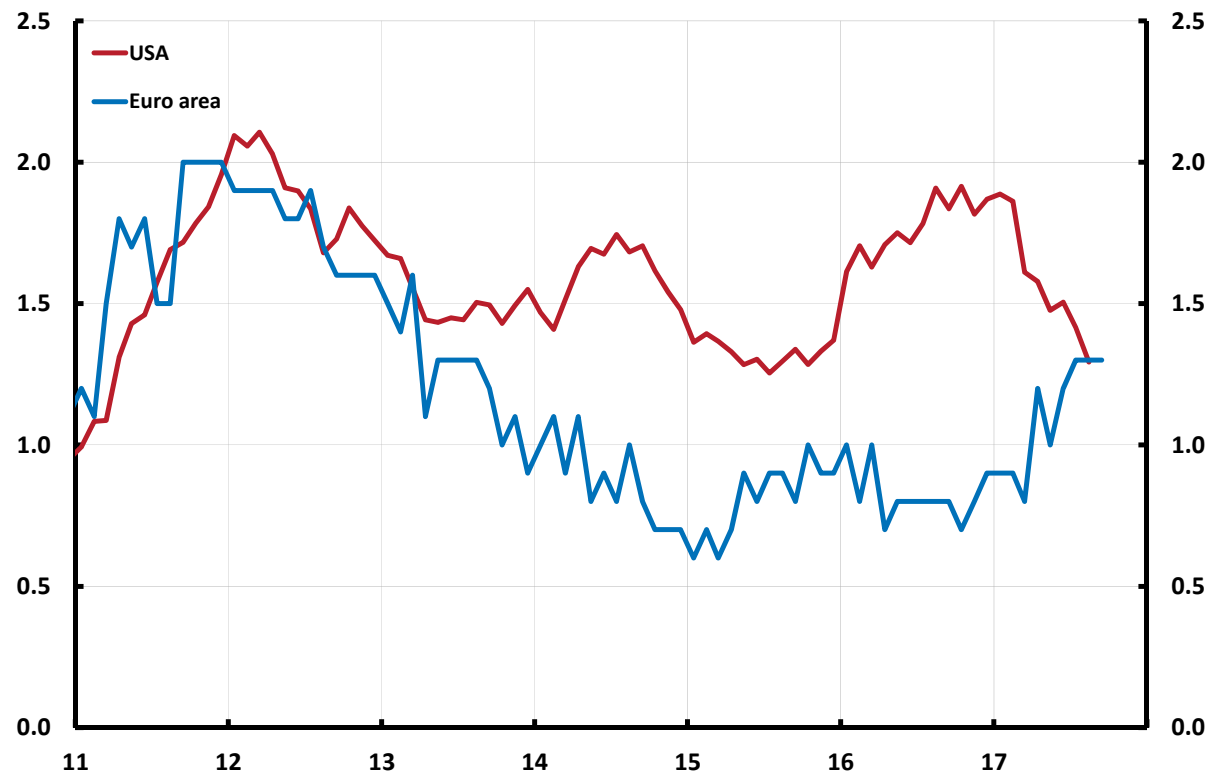
Note. HICP excluding energy and unprocessed food is shown for the euro area. PCE excluding energy and food is shown for the United States.

Sources: Bureau of Economic Analysis and Eurostat

Figure 3.8. Confidence indicators

Index, average = 100, standard deviation = 10, seasonally-adjusted data
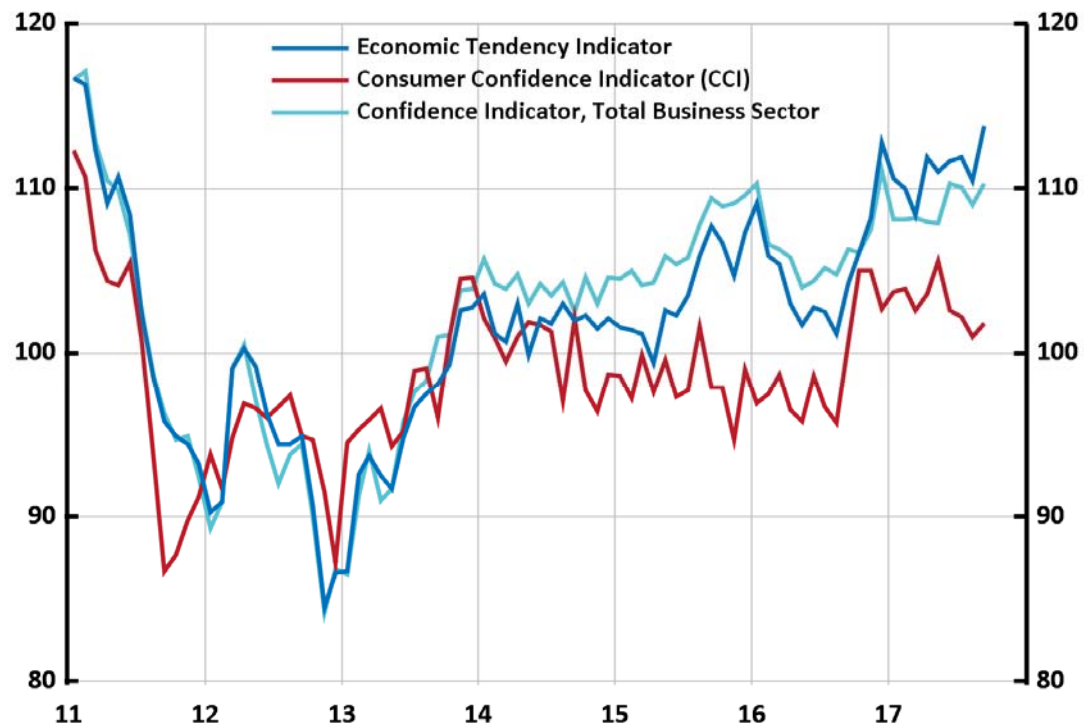
Source: National Institute of Economic Research

Figure 3.9. GDP, model forecast with uncertainty bands

Quarterly change in per cent, calculated as an annual percentage change, seasonally-adjusted data
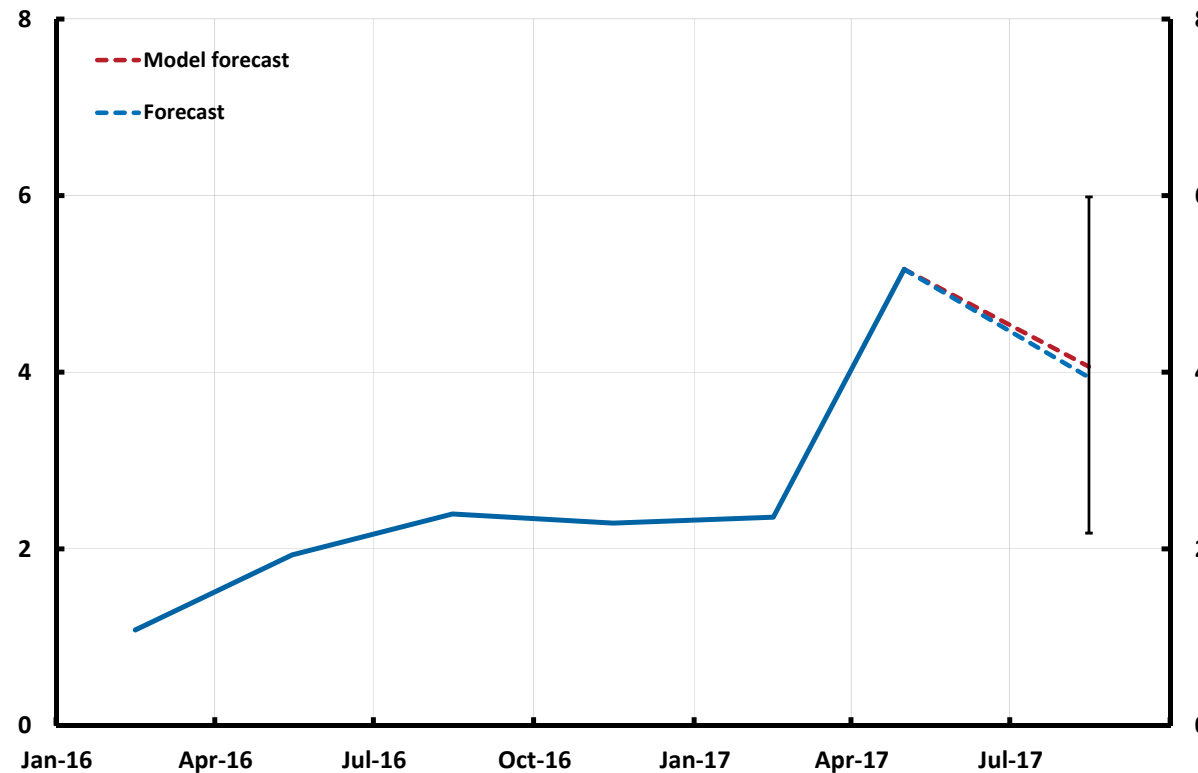
Note. The model forecast is an average of forecasts from different statistical models. The vertical line refers to a 50 per cent uncertainty band. The uncertainty band is based on the models' historical forecast errors. One explanation for the wide uncertainty interval is the large variation in growth outcomes between different quarters.

Sources: Statistics Sweden and the Riksbank

Figure 3.10. Total unemployment, and unemployment among Swedish-born and foreign -born

Per cent of the labour force, 15-74 years
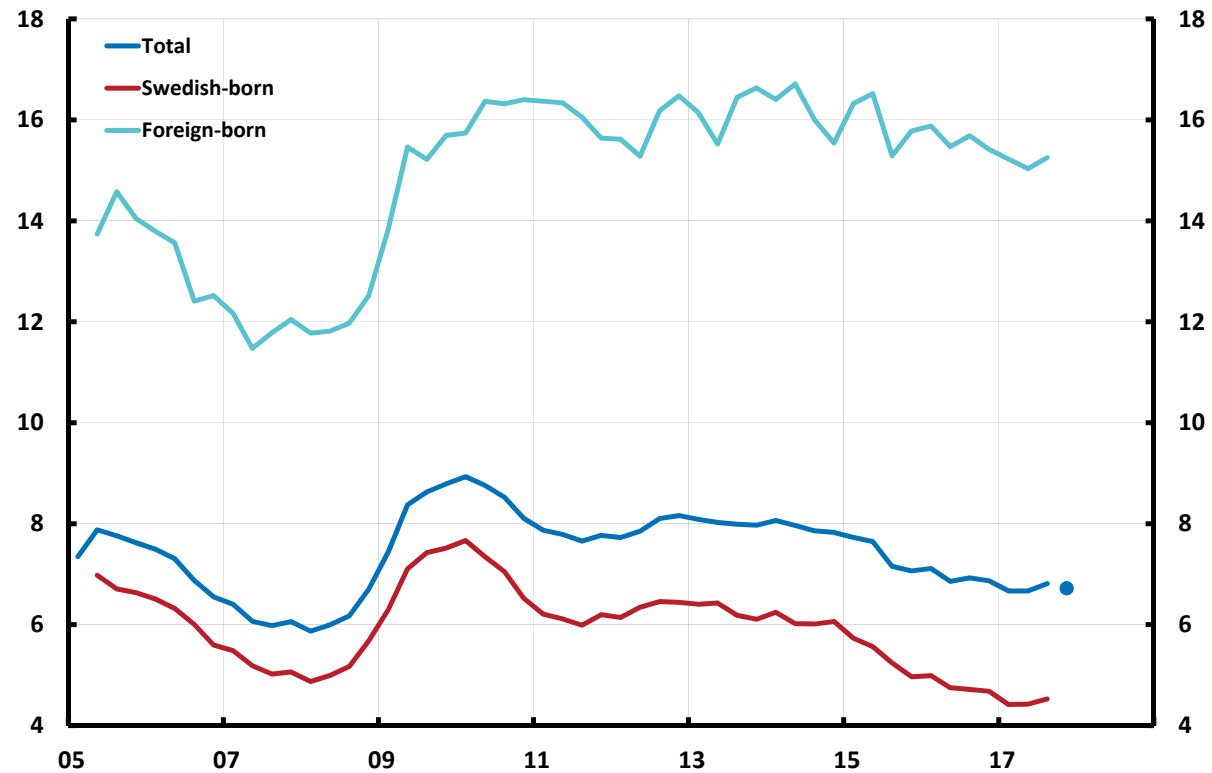
Note. The dot refers to the forecast for unemployment.

Figure 3.11. Vacancies and recruitment plans

Per cent of the labour force and net figures, respectively, seasonally-adjusted data
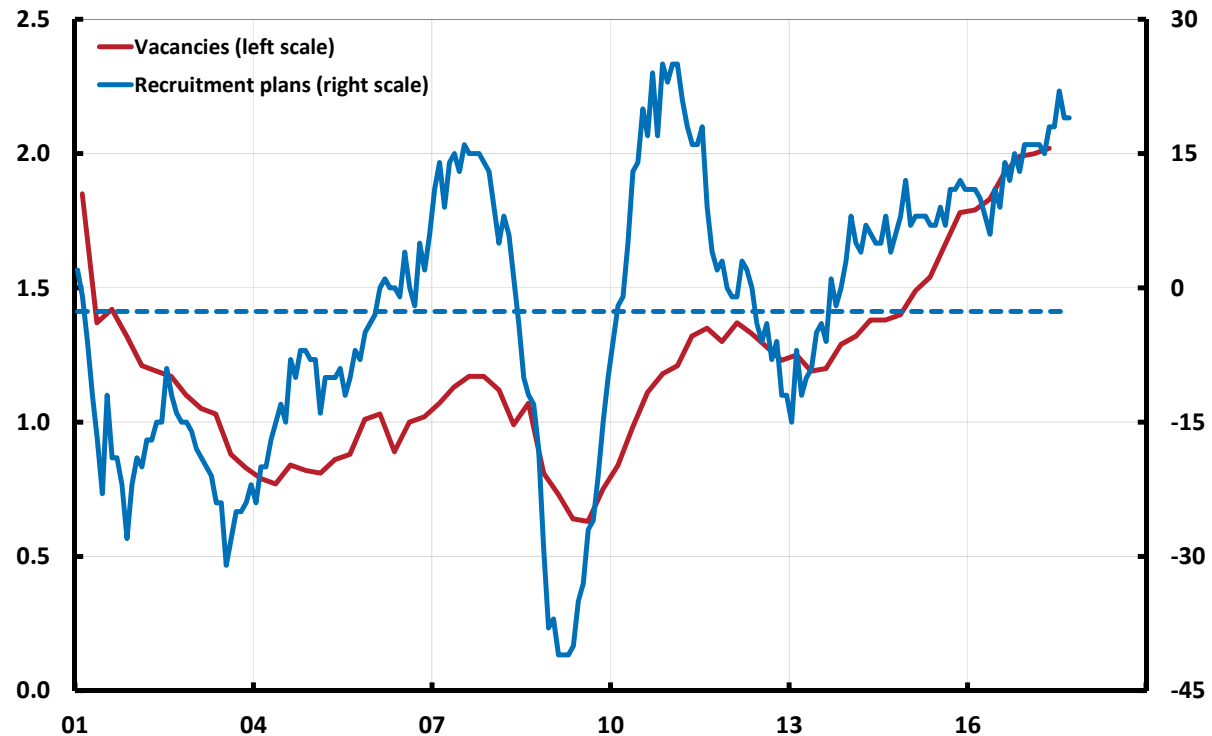
Note. Recruitment plans refer to expectations of the number of employed in the business sector three months ahead. The broken line represents the mean value since 2003.

Sources: The National Institute of Economic Research and Statistics Sweden

Figure 3.12. RU indicator

Standard deviation
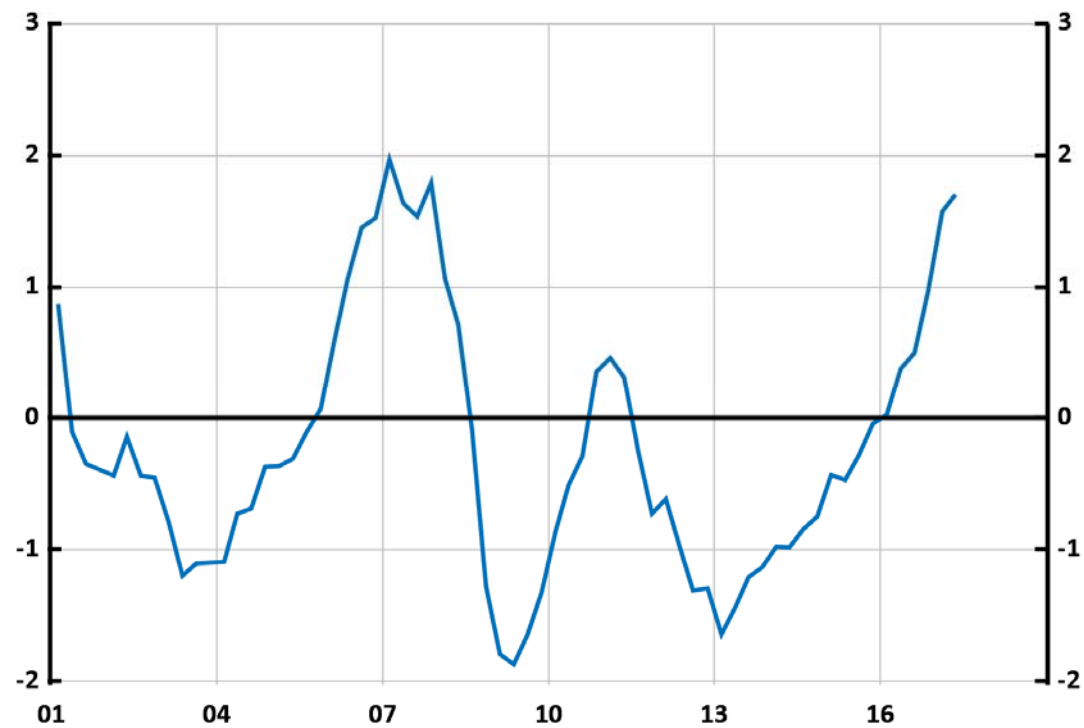
Chapter 4

Figure 4.1. Growth in various countries and regions
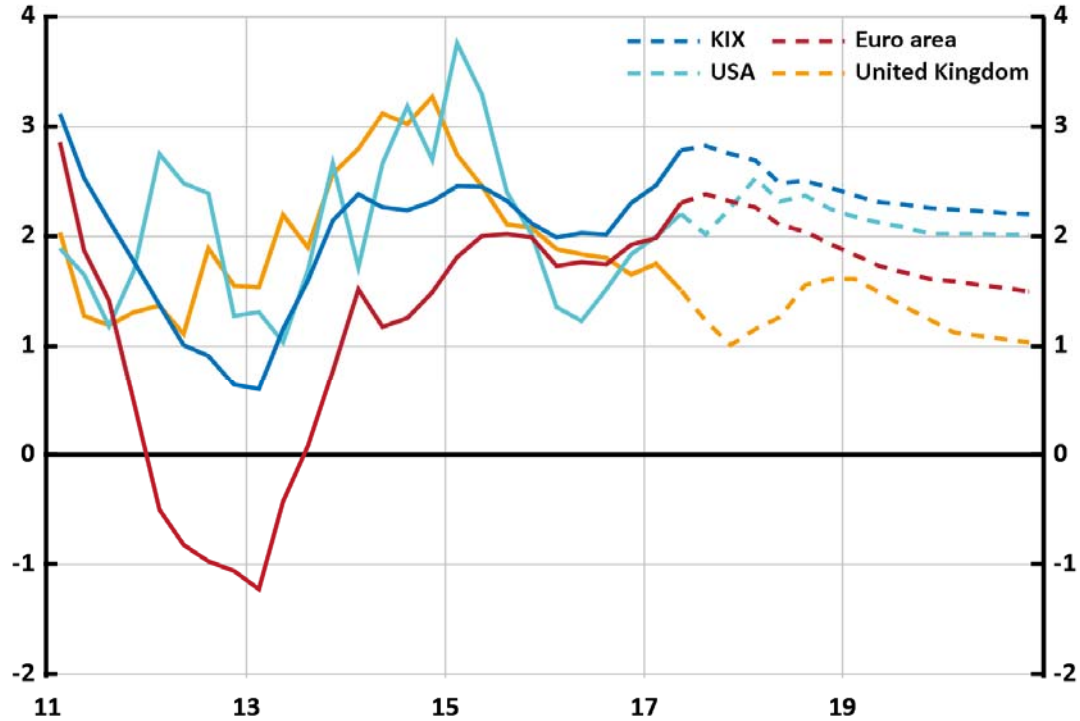
Annual percentage change

Note. KIX is an aggregate of the countries that are important to Sweden's international transactions.

Sources: Bureau of Economic Analysis, Eurostat, national sources, Office for National Statistics and the Riksbank

Figure 4.2. Confidence indicators in the euro area

Net figures
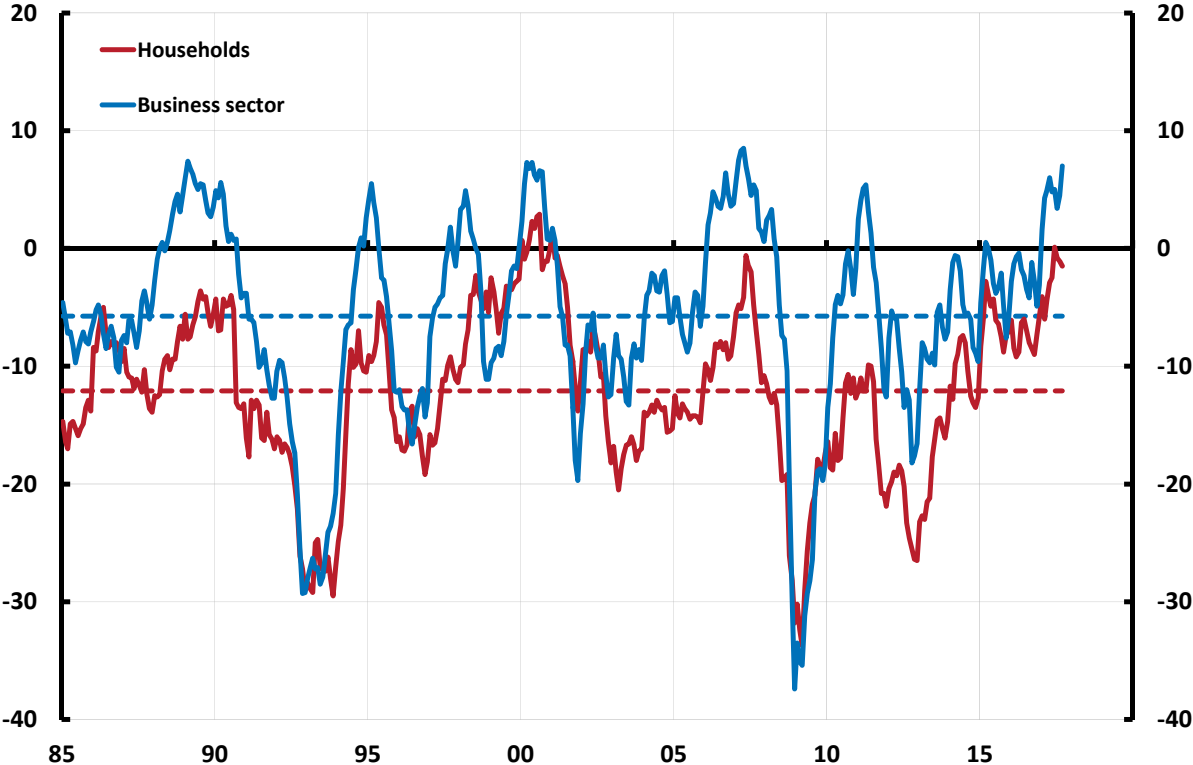
Note. Business sector refers to industrial companies. Broken lines refers to average between January 1985 and September 2017.

Source: European commission

Figure 4.3. Price of crude oil

USD per barrel

Note. Brent oil, forward rates are calculated as a 15-day average. The outcome refers to monthly averages of spot prices.

Sources: Macrobond and the Riksbank

Figure 4.4. Inflation in various countries and regions
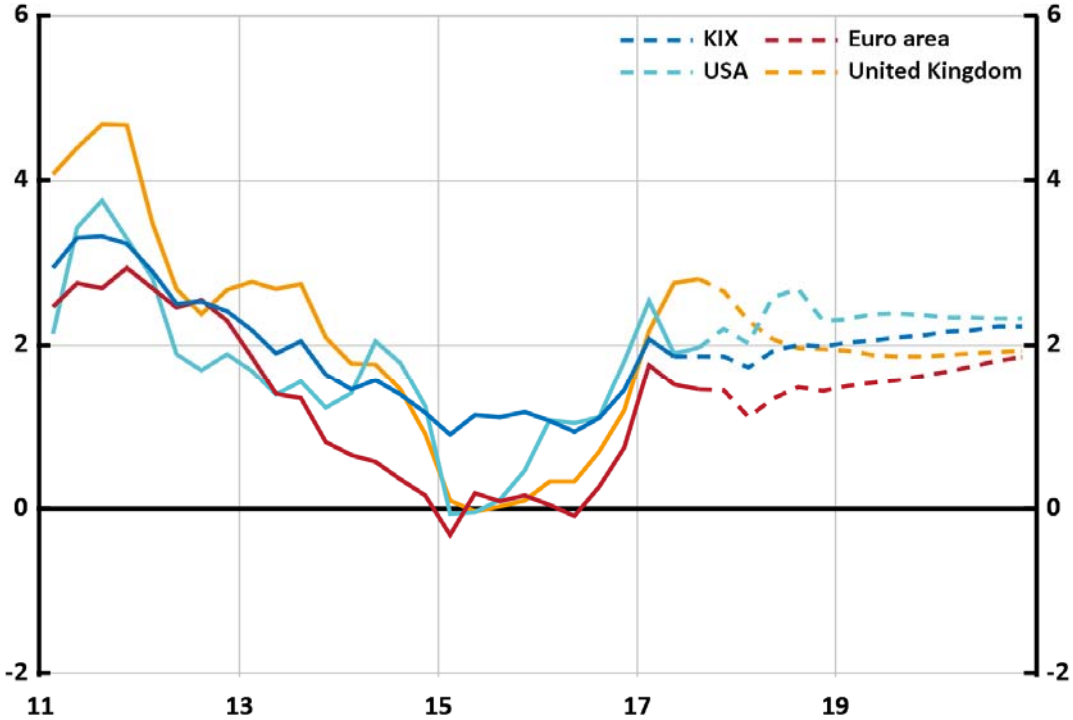
Annual percentage change

Note. KIX is an aggregate of the countries that are important to Sweden's international transactions. When calculating KIX-weighted inflation, the HICP is used for the euro area and the CPI for other countries. Inflation for the euro area shown is measured using the HICP and for the United States and the United Kingdom measured using the CPI.

Sources: The Bureau of Labor Statistics, Eurostat, national sources, Office for National Statistics and the Riksbank

Figure 4.5. Exports and the Swedish export market

Annual percentage change, calendar-adjusted data
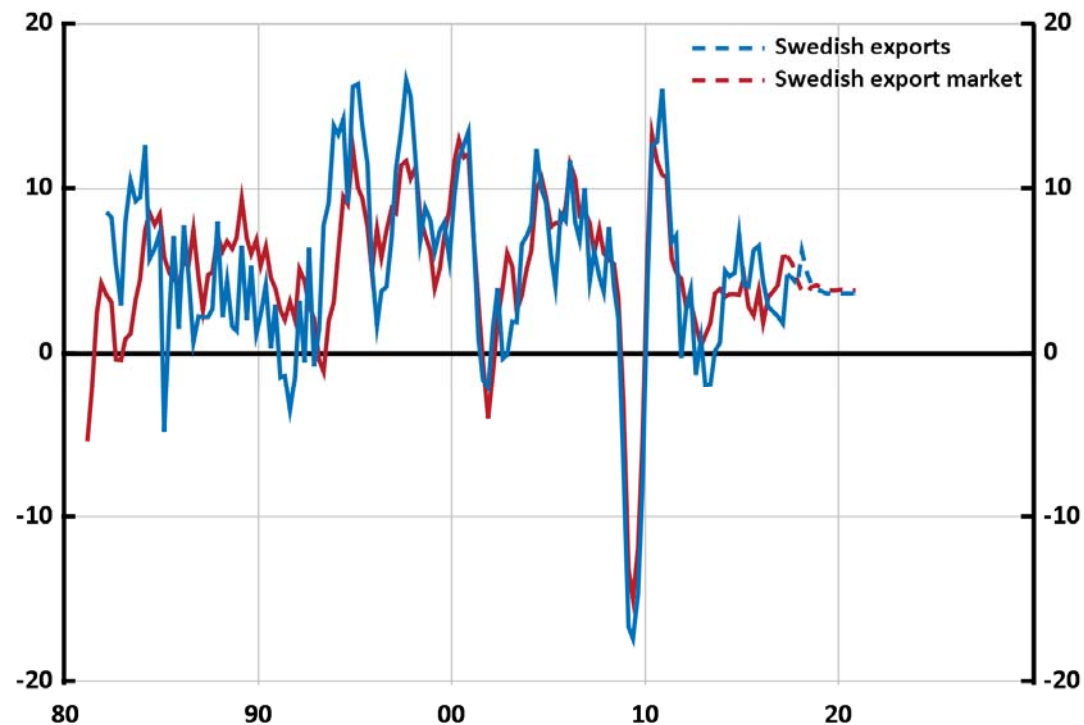
Note. The Swedish export market index aims to measure import demand in the countries to which Sweden exports. This is calculated by aggregating 32 countries and covers around 85 per cent of the total Swedish export market.

Sources: Statistics Sweden and the Riksbank

Figure 4.6. Household savings with and without collective insurance savings

Per cent of disposable income
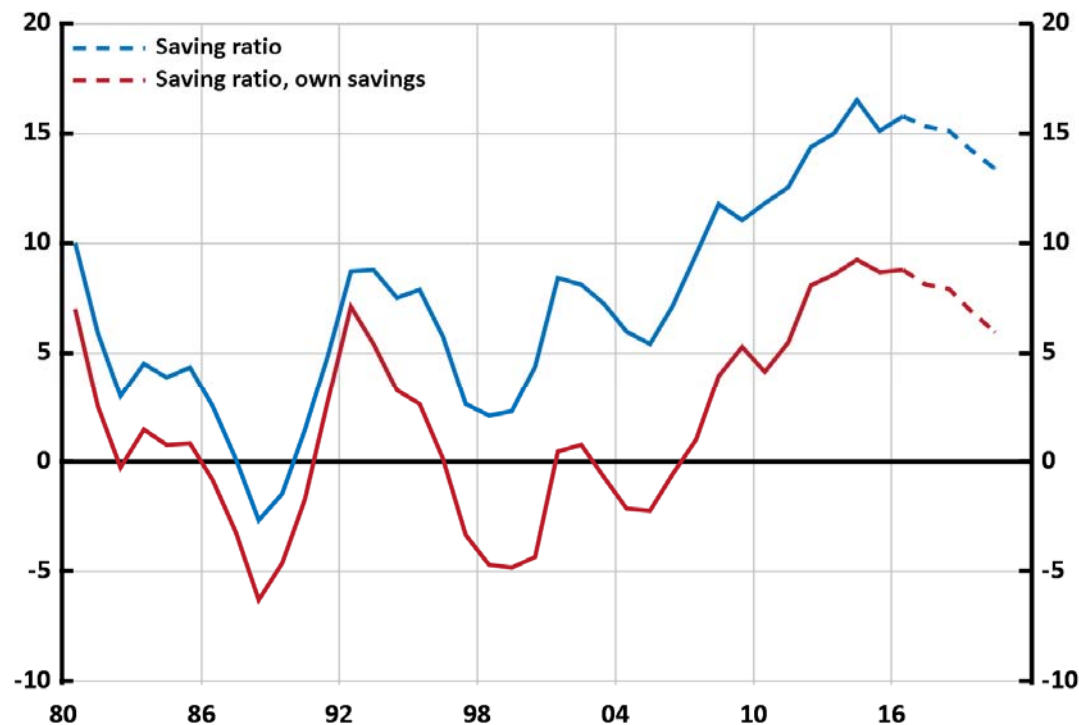
Note. Total household savings include collective insurance savings. The former definition, which was also termed 'total household saving', excluded collective insurance savings and the savings are the difference between income and consumer expenditure.

Sources: Statistics Sweden and the Riksbank

Figure 4.7. GDP in Sweden

Quarterly change in per cent, calculated as an annual percentage change, seasonally-adjusted data
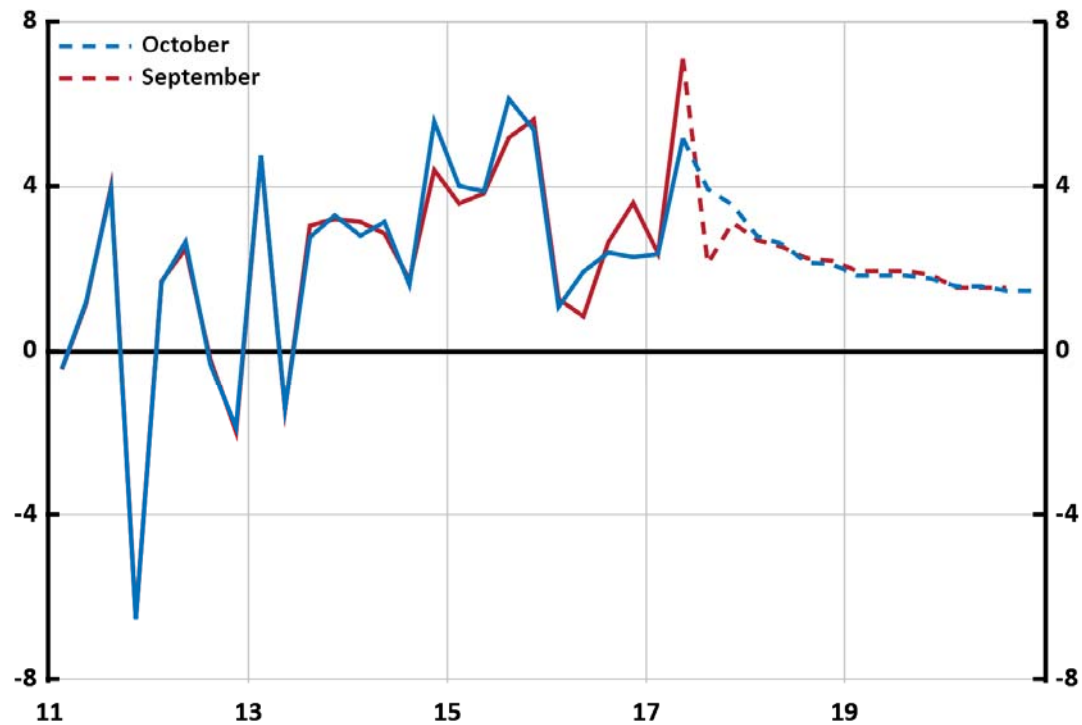
Figure 4.8. Employment rate and labour force participation

Employment and labour force as percentage of the population, aged 15–74, seasonally-adjusted data

- - - Employment rate, October
- - - Employment rate, September
- - - Labour force participation, October
- - - Labour force participation, September
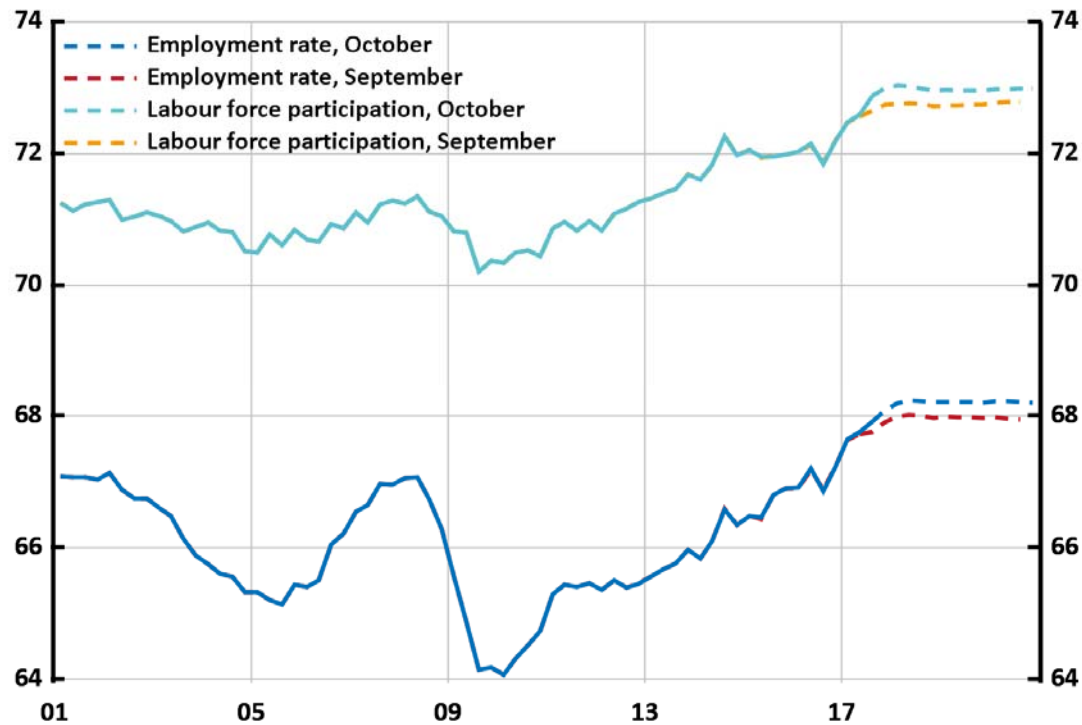
Figure 4.9. Population growth, 15–74 years

Annual percentage change
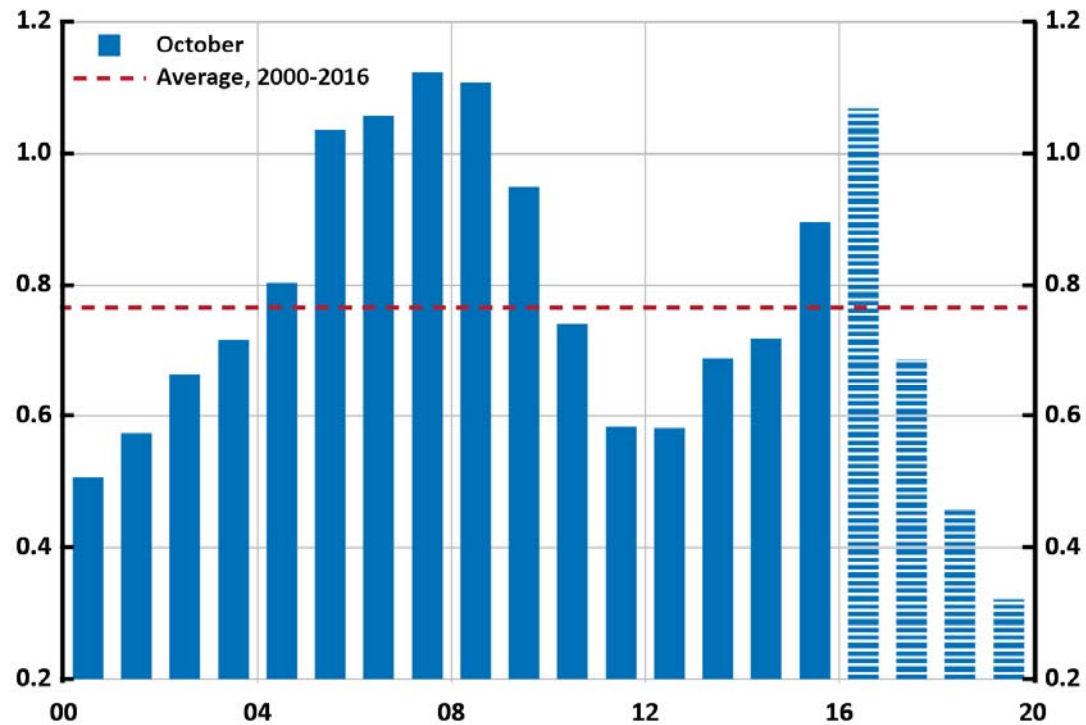
Figure 4.10. Beveridge curve

Per cent of the labour force, trend-adjusted values
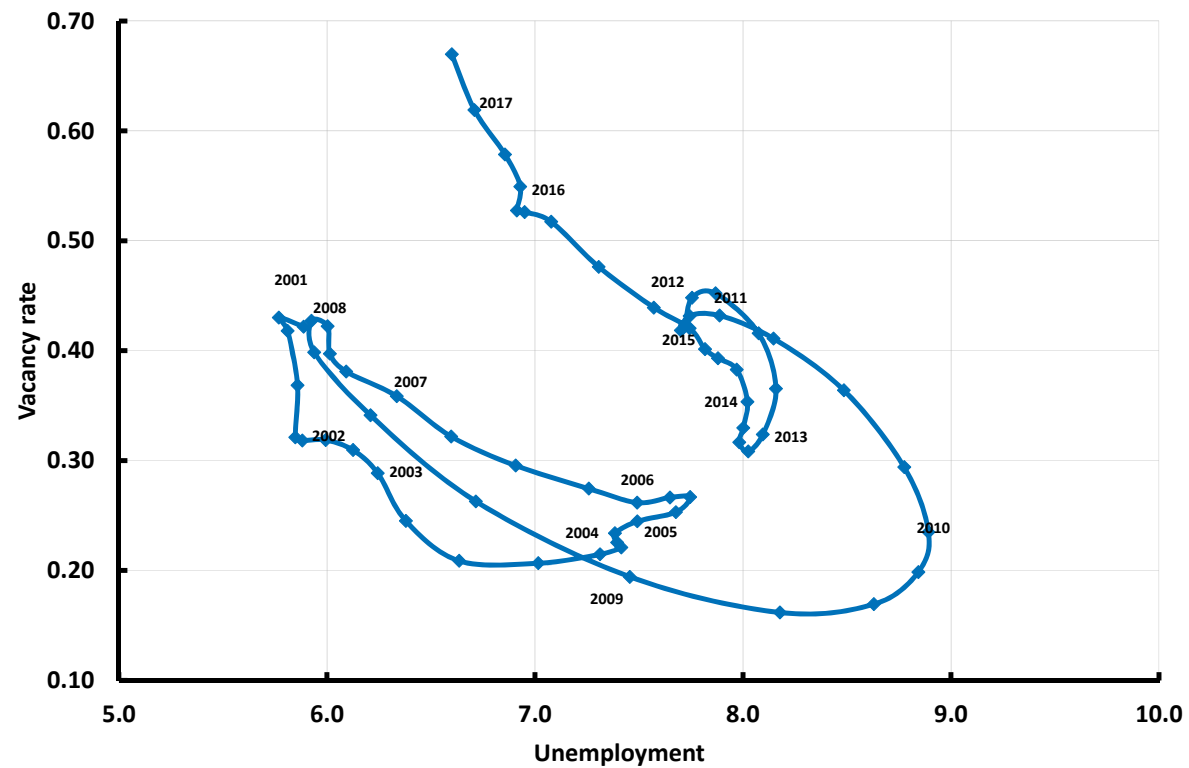
Note. Data labels mark the first quarter of the respective year.

Sources: Employment Service, Statistics Sweden and the Riksbank

Figure 4.11. Unemployment

Per cent of the labour force, 15–74 years, seasonally-adjusted data
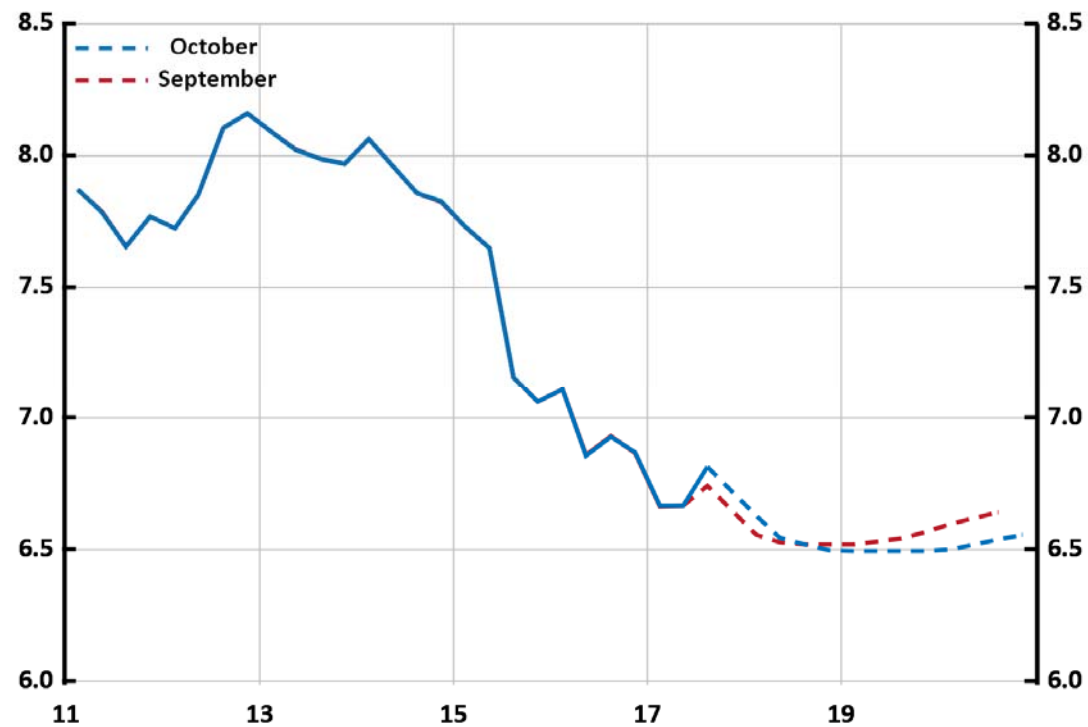
Figure 4.12. GDP gap, employment gap and hours gap

Per cent
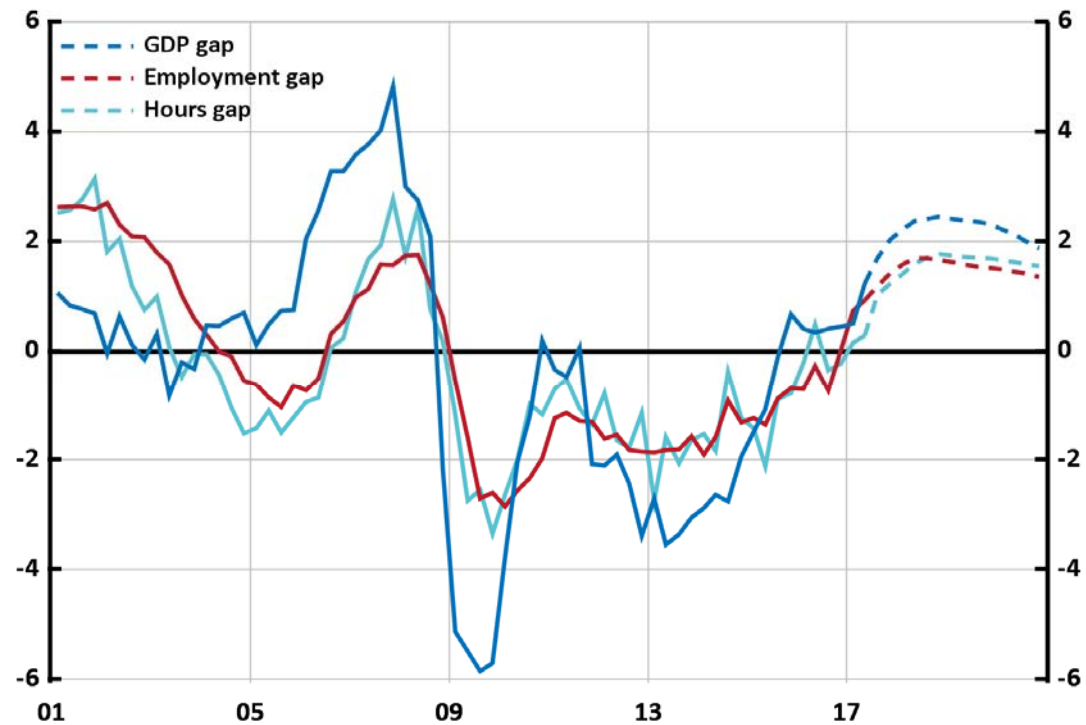
Note. The gaps refer to the deviation in GDP, the number of hours worked and the number of those employed from the Riksbank's assessed trends.

Sources: Statistics Sweden and the Riksbank

Figure 4.13. Cost pressures in the economy as a whole

Annual percentage change
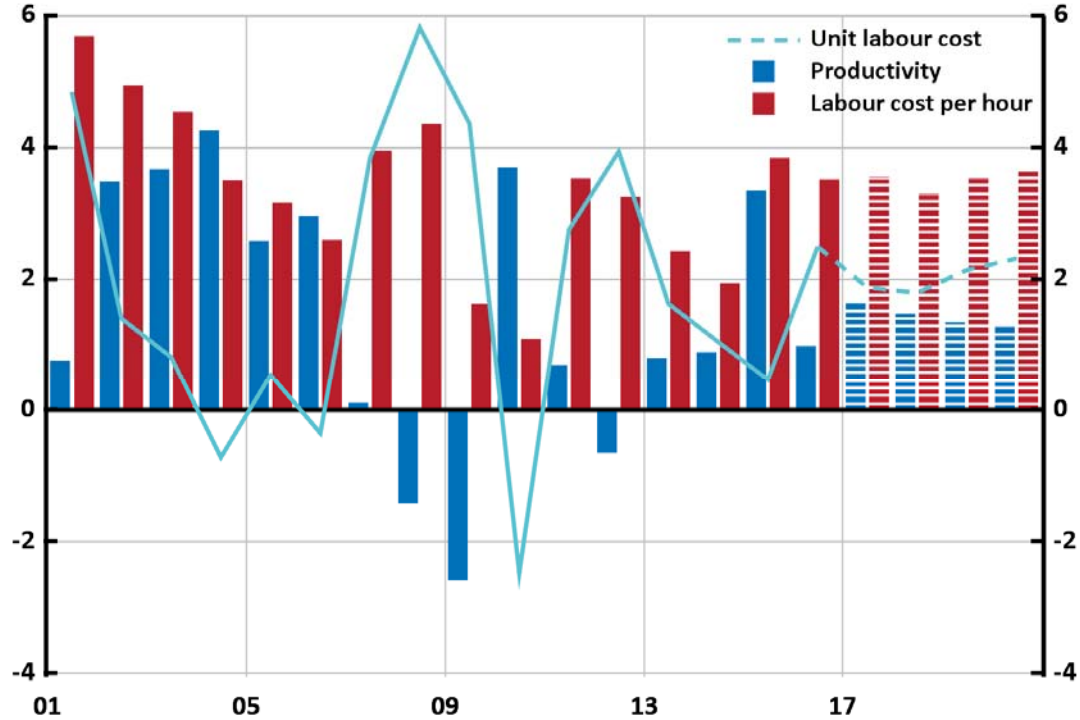
Sources: Statistics Sweden and the Riksbank

Figure 4.14. CPI, CPIF and CPIF excluding energy
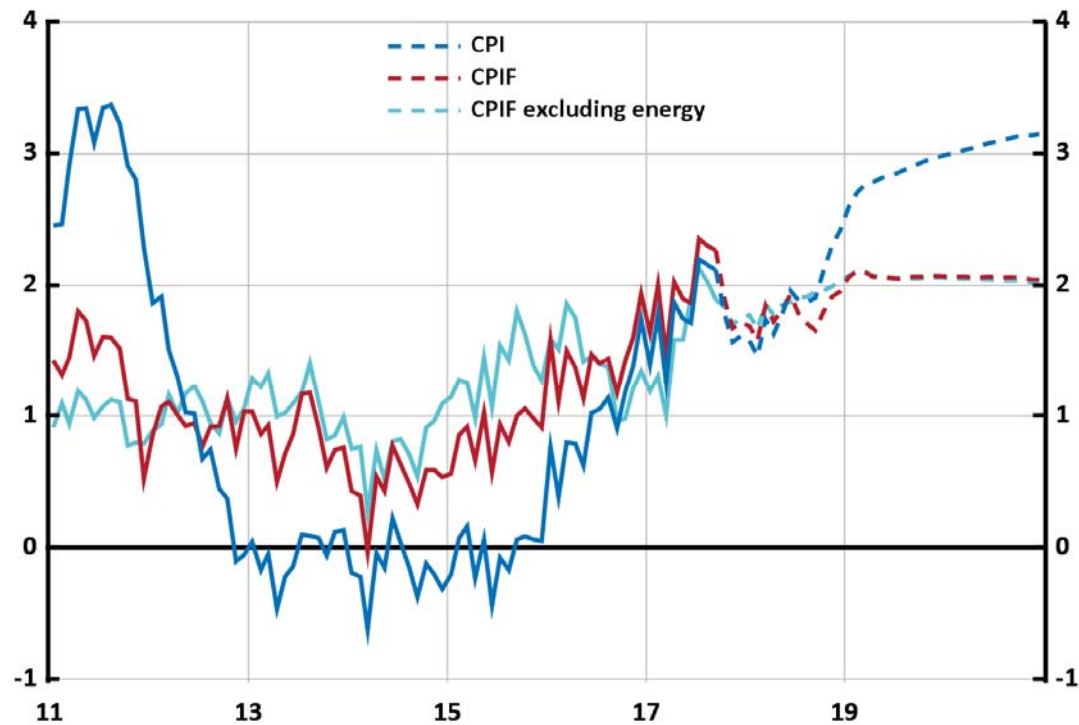
Annual percentage change

Note. The CPIF is the CPI with a fixed interest rate.

Figure 4.15. CPIF and HICP

Annual percentage change
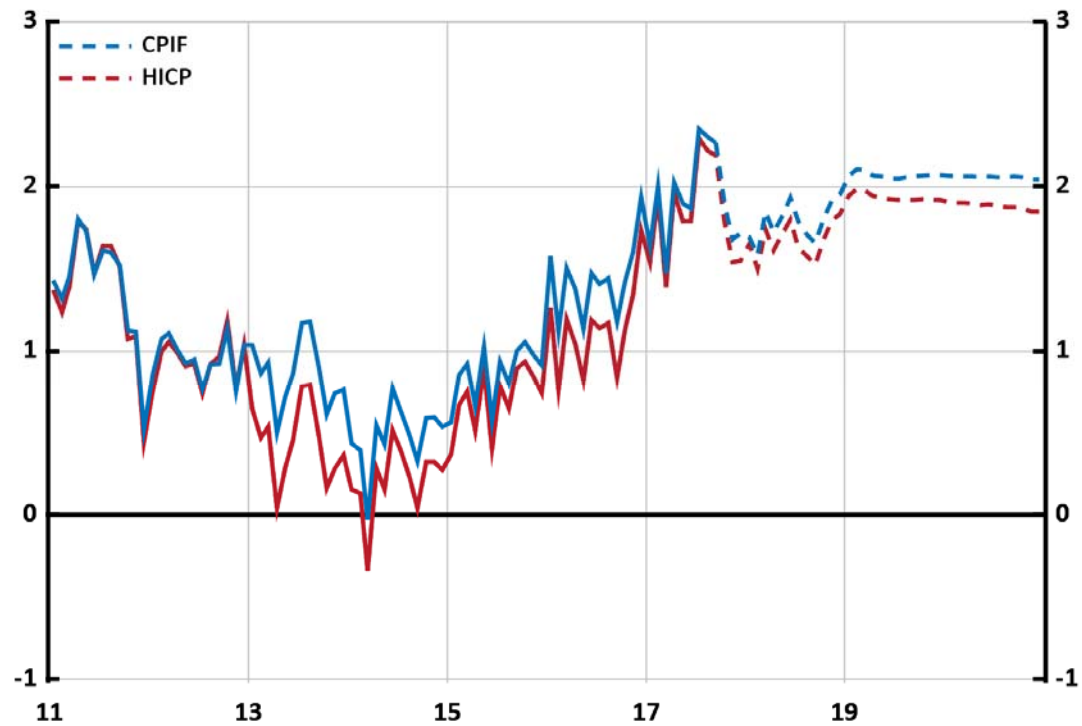
Tables

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Table 1. Repo rate forecast
Per cent, quarterly averages

	Q3 2017	Q4 2017	Q1 2018	Q4 2018	Q4 2019	Q4 2020
Repo rate	−0.5	−0.5 (−0.5)	−0.5 (−0.5)	−0.3 (−0.3)	0.2 (0.2)	0.8

Source: The Riksbank

Table 2. Inflation
Annual percentage change, annual average

	2016	2017	2018	2019	2020
CPIF	1.4	1.9 (2.0)	1.8 (1.9)	2.1 (2.1)	2.1
CPIF excl. energy	1.4	1.7 (1.7)	1.9 (1.9)	2.1 (2.1)	2.0
CPI	1.0	1.8 (1.8)	1.9 (2.1)	2.8 (2.9)	3.1
HICP	1.1	1.8 (1.9)	1.7 (1.8)	1.9 (2.0)	1.9

Note. The CPIF is the CPI with a fixed mortgage rate. HICP is an EU harmonised index of consumer prices.

Sources: Statistics Sweden and the Riksbank

Table 3. Summary of financial forecasts
Per cent, unless otherwise stated, annual average

	2016	2017	2018	2019	2020
Repo rate	−0.5	−0.5 (−0.5)	−0.4 (−0.4)	0.0 (0.0)	0.6
10-year rate	0.5	0.8 (0.8)	1.3 (1.5)	2.0 (2.2)	2.6
Exchange rate, KIX, 18 November 1992 = 100	111.7	112.3 (111.9)	110.2 (109.2)	108.7 (108.7)	107.0
General government net lending*	1.1	1.2 (0.9)	0.9 (0.7)	1.0 (0.8)	0.9

* Per cent of GDP

Sources: Statistics Sweden and the Riksbank

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Table 4. International conditions

Annual percentage change, unless otherwise stated

GDP	PPP-weights	KIX-weights	2016	2017	2018	2019	2020
Euro area	0.14	0.47	1.8	2.2 (2.1)	2.1 (1.8)	1.7 (1.6)	1.5
USA	0.16	0.08	1.5	2.1 (2.1)	2.4 (2.5)	2.1 (2.1)	2.0
Japan	0.05	0.02	1.0	1.6 (1.9)	1.1 (1.1)	0.8 (0.8)	0.4
China	0.15	0.08	6.7	6.8 (6.8)	6.2 (6.3)	6.1 (6.1)	6.1
KIX-weighted	0.75	1.00	2.1	2.7 (2.6)	2.5 (2.4)	2.3 (2.3)	2.2
World (PPP-weighted)	1.00	—	3.2	3.6 (3.6)	3.7 (3.7)	3.7 (3.7)	3.7

Note. Calendar-adjusted growth rates. The PPP-weights refer to the global purchasing-power adjusted GDP-weights, according to the IMF. The Riksbank updates the weights for the KIX krona index at the start of every year with a time lag of three years. The figures in the table are based on the new KIX weights for 2014 that are used for 2017, and on an assumption that the weights will develop according to the trend of the past five years in the coming forecast years.

CPI	2016	2017	2018	2019	2020
Euro area (HICP)	0.2	1.5 (1.4)	1.3 (1.2)	1.6 (1.7)	1.8
USA	1.3	2.2 (1.9)	2.4 (2.1)	2.4 (2.5)	2.3
Japan	−0.1	0.5 (0.6)	1.0 (1.1)	1.5 (1.5)	1.9
KIX-weighted	1.1	1.9 (1.8)	1.9 (1.9)	2.1 (2.2)	2.2

	2016	2017	2018	2019	2020
Policy rates in the rest of the world, per cent	−0.1	−0.1 (−0.1)	0.0 (0.0)	0.3 (0.2)	0.6
Crude oil price, USD/barrel Brent	45.1	53.6 (52.0)	55.7 (51.7)	54.8 (52.3)	54.6
Swedish export market	3.3	5.4 (5.0)	3.9 (3.9)	3.9 (3.8)	3.8

Note. Policy rates in the rest of the world refer to a weighted average of USA, the euro area, Norway and the United Kingdom.

Sources: Eurostat, IMF, Intercontinental Exchange, national sources, OECD and the Riksbank

Table 5. GDP by expenditure

Annual percentage change, unless otherwise stated

	2016	2017	2018	2019	2020
Private consumption	2.2	2.5 (2.3)	3.0 (2.6)	2.6 (2.4)	2.2
Public consumption	3.4	0.4 (0.4)	1.5 (2.1)	0.9 (1.3)	1.1
Gross fixed capital formation	5.6	7.8 (7.6)	4.1 (4.3)	2.2 (2.1)	1.6
Inventory investment*	0.0	0.0 (0.0)	0.0 (−0.1)	0.0 (0.0)	0.0
Exports	3.3	3.4 (2.7)	4.6 (4.4)	3.6 (3.6)	4.1
Imports	3.4	4.4 (2.5)	4.5 (4.7)	4.0 (3.9)	4.1
GDP	3.3	2.9 (3.2)	2.9 (2.7)	2.0 (2.0)	1.9
GDP, calendar-adjusted	3.1	3.1 (3.4)	3.1 (2.8)	2.0 (2.1)	1.6
Final figure for domestic demand*	3.2	3.1 (3.0)	2.7 (2.7)	1.9 (2.0)	1.7
Net exports*	0.1	−0.2 (0.2)	0.2 (0.1)	0.0 (0.1)	0.2
Current account (NA), per cent of GDP	5.1	4.8 (5.2)	4.8 (5.1)	4.7 (5.0)	4.6

*Contribution to GDP growth, percentage points

Note. The figures show actual growth rates that have not been calendar-adjusted, unless otherwise stated. NA is the National Accounts.

Sources: Statistics Sweden and the Riksbank

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Table 6. Production and employment

Annual percentage change, unless otherwise stated

	2016	2017	2018	2019	2020
Population, aged 15–74	0.9	1.1 (1.1)	0.7 (0.7)	0.5 (0.5)	0.3
Potential hours worked	0.8	0.7 (0.7)	0.6 (0.6)	0.5 (0.5)	0.4
GDP, calendar-adjusted	3.1	3.1 (3.4)	3.1 (2.8)	2.0 (2.1)	1.6
Number of hours worked, calendar-adjusted	2.1	1.5 (1.4)	1.6 (1.6)	0.6 (0.5)	0.3
Employed, aged 15–74	1.5	2.3 (2.1)	1.2 (1.0)	0.5 (0.4)	0.3
Labour force, aged 15–74	1.0	2.0 (1.8)	1.0 (0.9)	0.4 (0.4)	0.4
Unemployment, aged 15–74 *	6.9	6.7 (6.7)	6.5 (6.5)	6.5 (6.5)	6.5

* Per cent of the labour force

Note. Potential hours refer to the long-term sustainable level for the number of hours worked according to the Riksbank's assessment.

Sources: Statistics Sweden and the Riksbank

Table 7. Wages and labour costs for the economy as a whole

Annual percentage change, calendar-adjusted data unless otherwise stated

	2016	2017	2018	2019	2020
Hourly wage, NMO	2.4	2.7 (2.7)	3.1 (3.1)	3.3 (3.3)	3.4
Hourly wage, NA	2.2	3.2 (–)	3.2 (–)	3.4 (–)	3.5
Employers' contribution*	0.7	0.2 (0.2)	0.0 (0.1)	0.1 (0.1)	0.1
Hourly labour cost, NA	2.9	3.4 (–)	3.3 (–)	3.5 (–)	3.6
Productivity	0.9	1.6 (2.0)	1.5 (1.2)	1.4 (1.6)	1.3
Unit labour cost	2.5	1.9 (1.6)	1.8 (2.2)	2.1 (2.0)	2.3

* Contribution to the increase in labour costs, percentage points

Note. NMO is the National Mediation Office's short-term wage statistics and NA is the National Accounts. As of this report, hourly wage and labour cost per hour according to the National Accounts are based on the number of hours worked for employees. There is no previous forecast according to the new definition. Labour cost per hour is defined as the sum of actual wages, social-security charges and wage taxes (labour cost sum) divided by the number of hours worked by employees. Unit labour cost is defined as labour cost sum divided by GDP in fixed prices.

Sources: National Mediation Office, Statistics Sweden and the Riksbank

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